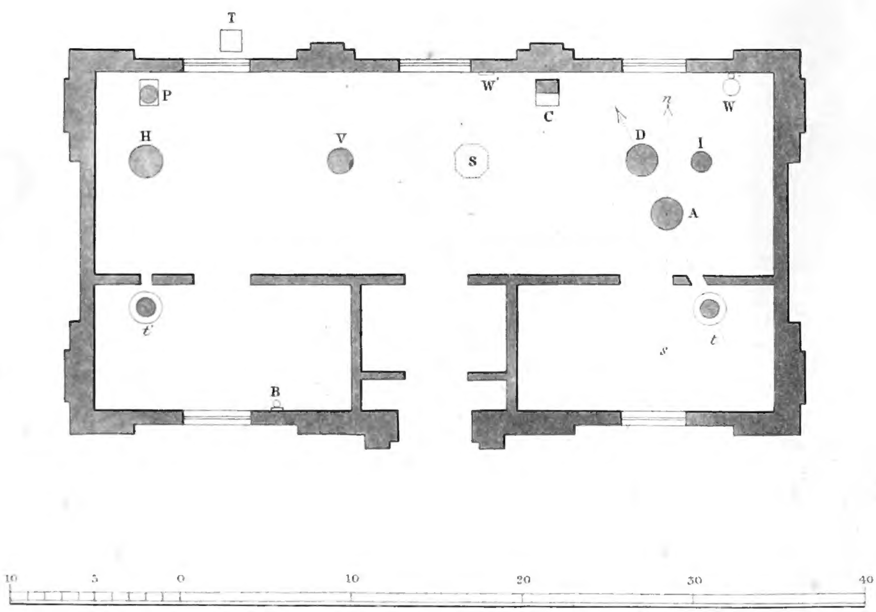


W. & A. K. Johnston Sc.

TRANSACTIONS

OF THE

ROYAL SOCIETY

OF

EDINBURGH.

VOL. XVIII.

CONTAINING THE

MAKERSTOUN MAGNETICAL AND METEOROLOGICAL OBSERVATIONS

FOR

1844.

EDINBURGH:
PUBLISHED BY ROBERT GRANT & SON, 82 PRINCES STREET; AND
T. CADELL, STRAND, LONDON.

MDCCCXLVIII.

OBSERVATIONS

IN

MAGNETISM AND METEOROLOGY,

MADE AT

MAKERSTOUN IN SCOTLAND,

IN THE OBSERVATORY OF

GENERAL SIR THOMAS MAKDOUGALL BRISBANE, BART.,

G.C.B., G.C.H., D.C.L., LL.D., F.R.S., F.R.A.S., H.M.R.I.A., PRESIDENT OF THE ROYAL SOCIETY OF EDINBURGH, AND CORRESPONDING MEMBER OF THE INSTITUTE OF FRANCE,

IN 1844.

FORMING VOL. XVIII. OF THE TRANSACTIONS OF THE ROYAL SOCIETY OF EDINBURGH.

DISCUSSED AND EDITED BY

JOHN ALLAN BROUN, ESQ.,

DIRECTOR OF THE OBSERVATORY.

EDINBURGH:

PRINTED BY NEILL AND COMPANY.

MDCCCXLVIII.

CONTENTS.

Plan of the Observatory, and projected observations at the end of the volume, see Introduction, p. lxvi., No. 116.

ERRATA IN THIS VOLUME OF OBSERVATIONS FOR 1844.

Introduction, page xxi., line 4, *for* $\Phi = 0{\cdot}0012$ *read* $\Phi = 0{\cdot}00212$
Page 3, 8^d 3^h, column "Declination," *for* 28·18 *read* 21·46
— 3, 10^d 4^h, column "Declination," *for* 28·13 *read* 22·08
— 3, 10^d 11^h, column "Balance Corrected," *for* 807·3 *read* 755·7
— 9, 10^d 12^h, column "Balance Corrected," *for* 785·1 *read* 685·1
— 12, 28^d 16^h, column "Balance Corrected," *for* 667·4 *read* 617·4
— 13, 4^d 7^h, column "Balance Corrected," *for* 882·3 *read* 782·3
— 18, 29^d 13^h, column "Balance Corrected," *for* 379·4 *read* 419·1
— 18, 30^d 6^h, column "Balance Corrected," *for* 748·3 *read* 848·3
— 28, 22^d 27^h, column "Balance Corrected," *for* 574·3 *read* 524·3
— 32, 16^d 20^h, column "Bifilar Corrected," *for* 528·5 *read* 518·5
— 41, 1^d 5^h, column "Bifilar Corrected," *for* 519·9 *read* 619·9
— 50, 19^d 2^h, column "Balance Corrected," *for* 037·5 *read* 637·5
— 54, 10^d 11^h, column "Bifilar Corrected," *for* 336·1 *read* 536·1
— 54, 13^d 23^h, column "Bifilar Corrected," *for* 228·0 *read* 528·0
— 56, 20^d 19^h, column "Balance Corrected," *for* 338·4 *read* 438·4
— 66, 14^d 8^h, column "Balance Corrected," *for* 649·5 *read* 749·5
— 73, 12^h 55^m, column "Bifilar Corrected," *for* 529·9 *read* 520·9
— 86, 21^h 30^m, column "Balance Corrected," *for* 509·3 *read* 609·3
— 95, 10^d 8^h 0^m, column "Declination," *for* 24·1 *read* 24·19
— 107, 4^d 10^h 22^m, column "Balance Corrected," *for* 676·6 *read* 576·6
— 124, 25^d 7^h 15^m, column "Bifilar Corrected," *for* 694·3 *read* 594·3
— 127, 22^d 9^h 0^m, column "Declination," *for* 09·29 *read* 08·29
— 164, foot-note, *for* Nov. 20^d *read* Nov. 22^d 0^h
— 187, 11^d 23^h, column "Diff.," *for* 1·9 *read* 2·9
— 191, 20^d 21^h, column "Diff.," *for* 0·6 *read* ......
— 201, 18^d 9^h, column "Diff.," *for* 0·8 *read* 0·7
— 214, 22^d 11^h, column "Wet," *for* 2·0 *read* 42·0
— 222, 14^d 2^h, column "Diff.," *for* 5·2 *read* 6·2
— 233, 12^d 22^h, column "Diff.," *for* 0·3 *read* 1·3
— 238, 26^d 13^h, column "Barometer," *for* 39·672 *read* 29·672
— 240, 2^d 11^h, column "Dry," *for* 42·0 *read* 52·0
— 253, 5^d 6^h, column "Wet," *for* 57·0 *read* 57·6
— 254, 6^d 16^h, column "Barometer," *for* 29·880 *read* 28·880
— 298, 4^d 19^h, column "Dry," *for* 35·3 *read* 25·3
— 310, April 2^d, column "Min.," *for* 30·4 *read* 40·4
— 311, September 15^d, column "Min.," *for* 57·9 *read* 52·0 ?
— 311, December 15^d, column "Max.," *for* ...... *read* 36·6 ?
— 356, line 8, *for* 0·003605 *read* 0·003905
— 376, Table XL., October 13^d, *for* 0196 *read* [0196]

ERRATA IN THE VOLUME OF OBSERVATIONS FOR 1843.

Introduction, 1843, page xxvi., line 13, *for* $1 + k$ *read* $1 - k$
——— — 17, *for* observation *read* vibration
——— — 22, *for* $1 + k$ *read* $1 - k$
page xxxvi., line 4, *for* $\cot\theta$ *read* $\tan\theta$
page lxv., line 22, *for* 2 and 3 *read* xxxvi. and xxxvii.
Page 31, 14^h 0^m, column "Bifilar Corrected," *for* 557·2 *read* 537·2
— 41, 9^h 0^m, column "Balance Corrected," *for* 80·63 *read* 806·3
— 44, 18^h 10^m, column "Declination," *for* 15·54 *read* 17·56
— 44, 19^h 5^m, column "Bifilar Corrected," *for* 815·1 *read* 515·1
— 46, 14^h 30^m, column "Bifilar Corrected," *for* 217·2 *read* 517·2
— 67, July 25^d 10^h 23^m, column "Balance Corrected," *for* 826·6 *read* 626·6
— 73, second column of Göttingen mean time, *for* Dec. 28^d 2^h *read* Dec. 28^d 3^h
— 82, Dec. 18^d 1^h 31^m, column "Unifilar Reading," *for* 20·29 *read* 25·29 The quantities in the three following columns, and in the last two columns, will require equivalent corrections, but see page xxv., No. 28, Introduction for 1844.
Page 130, last line, *for* indicate *read* indication
— 146, July 21^d 8^h, column "Diff.," *for* 3·1 *read* 2·9
— 151, July 31^d 8^h, *for* cirri-like *read* cirri, like
— 170, Oct. 8^d 18^h, column "Barometer," *for* 30·228 *read* 29·228
— 237, line 15 below Table XIII., *for* solstices *read* equinoxes
— 267, line 2 below Table VI., *for* $7^\circ{\cdot}7$ *read* $78^\circ{\cdot}7$
— 303, line 17 below Table XXXV., *for* monthly *read* daily

ERRATA IN THE VOLUME OF OBSERVATIONS FOR 1841–2.

Introduction, page xi., line 6, *for* the term 1842 *read* the October term of 1842
— xxxiii., line 3 from foot, *for* 23 *read* 13
— xli., line 10, column "$-Q$," *for* 0·000342 *read* 0·000298
— xli., line 6 from foot, *for* 0·0002979 *read* 0·0002972
— xli., line 5 from foot, *for* 0·0002915 *read* 0·0002922
— xlvi, heading of Table 22, *for* 23 *read* 21
Page 34, 11^h 12^m, column "Balance Corrected," *for* 560·0 *read* 860·0
— 149, line 10 below Table XIX., *for* 2^h *read* 23^h
— 158, Table II., head of 5th column, *for* 3^h *read* 5^h

INTRODUCTION.

Position and Description of the Observatory.

1. The Magnetical and Meteorological Observatory at Makerstoun, in Roxburghshire, was erected by General Sir Thomas Makdougall Brisbane, Bart., in the year 1841. The geographical co-ordinates are as follow :—

Latitude, ...	55° 34′ 45″ N.*
Longitude, ...	0^h 10^m $3{\cdot}5^s$ W. of Greenwich.†

Height of the barometer cistern above mean water at Berwick, 213 feet.‡

2. The Magnetical Observatory is situate nearly on the summit of a ridge, which occupies the left or northern bank of the Tweed, being 540 feet distant from, and 80 feet above, that river. The Astronomical Observatory is upon the highest part of the ridge, 140 feet due west of the Magnetic Observatory. A fair horizon is seen from the Observatory hill, being bounded about 10 miles to the east by a slightly-swelling ground, which, to the east-south-east, seems to join the Cheviot Hills. The view is bounded about a mile to south and south-west by a ridge, forming the right bank of the Tweed; about 500 feet to the south-west and north-west by masses of trees in the Makerstoun grounds;§ and from 1 to 3 miles to north-west, north, and

* Ast. Nach., vol. x., p. 214.

† Deduced from the longitude of the Astronomical Observatory, Mem. Roy. Ast. Soc., vol. xi., p. 171.

‡ Obtained from levels for a railway, and from barometric comparisons.—See Makerstoun Observations for 1843, Introduction, p. ix.

§ The above view, taken from a point about fifty yards to the NE. of the Magnetic Observatory, shews the trees in the grounds at their most unfavourable elevation.

north-east, by an elevated ridge, which forms, to some extent, the northern boundary of the valley of the Tweed. From north, by the east, to the south, the elevation of the horizon, with a slight exception, is under 2°; from the north to the north-west, increasing from 2° to 4°; from the north-west to the south-west, the tops of the trees are elevated from 5° to 8°; and from the south-west to the south the elevation is under 4°. The highest point of the Cheviots, which is 2656 feet above the level of the sea, is about 18 miles to the east-south-east; it is occasionally referred to in the meteorological remarks on clouds.

3. The Observatory hill, it is believed, is composed of felspathic trap. The Tweed, immediately to the south, and for a mile to the east and west, flows more or less through this rock, which does not appear upon any part of the hill. The opening for a foundation to the Observatory shewed only masses of rolled pebbles, and boulders of greywacke and trap.

4. The Observatory is rectangular in its plan, 40 feet by 20 feet internally. It is formed of wood; copper nails were used; and iron carefully excluded from every part of the structure. The pillars for the magnetometers and telescopes are of stone, from 22 inches to 19 inches in diameter, and are placed upon excellent stone foundations, completely unconnected with the floor, and every part of the building. By a reference to the plan and elevation, the following details will be understood. (Plate I.)

There are two windows to the south, with the door between; and three to the north, which open like folding doors. The dimensions of the principal apartment are, 40 feet long, 12 feet broad, and 12 feet high. The two ante-rooms are each 15 feet long, $7\frac{1}{2}$ feet broad, and 12 feet high. The instruments are indicated in the plan as follow:—D, the Declinometer, *t*, its Reading Telescope; A, the Azimuth Circle and Transit; H, the Bifilar or Horizontal Force Magnetometer, *t′*, its Reading Telescope, P, a Pillar for a Collimator (not used); V, the Balance or Vertical Force Magnetometer; I, Pillar for the Inclinometer (not used here); B, the Standard Barometer; W, the Anemometer; W′, the Wind-Vane Dial-Plate; T, the Thermometer Case; C, the Mean Time Clock; S, the Copper Stove (removed Nov. 4^d 23^h, 1844); *n s*, the Astronomical Meridian; D *t*, the Magnetical Meridian. The vane farthest to the right in the elevation, Plate I., belongs to the anemometer; the others give the direction of the wind.

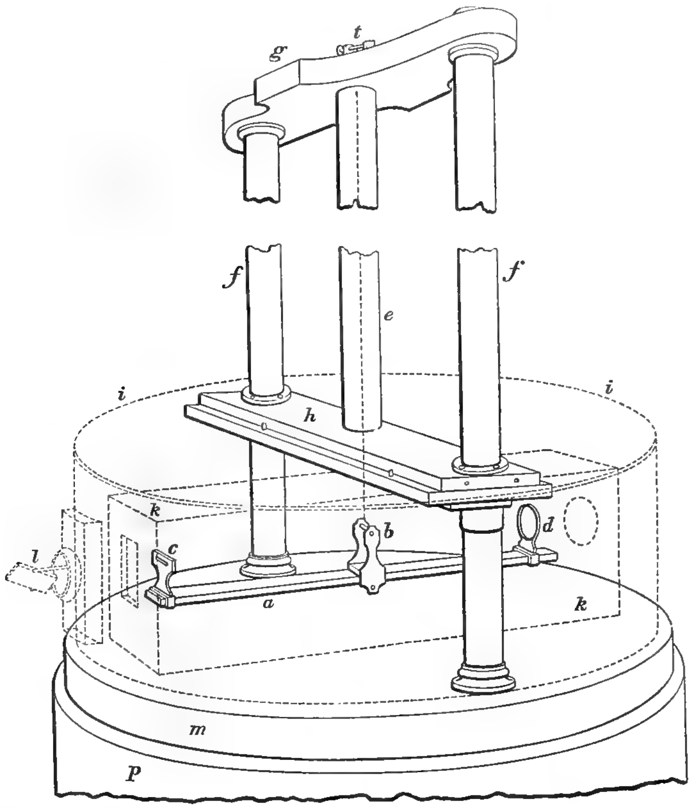
SYSTEM OF OBSERVATION, AND STAFF OF OBSERVERS.

5. In the beginning of 1843, the number of daily observations was increased to nine, at two-hourly intervals, commencing with 18^h Göttingen mean time (5^h 10^m A.M. Makerstoun mean time); these, together with all the other daily observations, were made by Mr WELSH and myself. In the end of 1843, I recommended to Sir THOMAS BRISBANE to add Mr ALEXANDER HOGG, who had been previously employed in the term-day observations, to the establishment, for the purpose of obtaining a complete

diurnal series of observations. Sir THOMAS, with his usual anxiety to render the Observatory in every respect useful to science, at once complied with my recommendation; and, in the beginning of the year 1844, hourly observations were commenced, which were continued till the end of the year 1845. The whole staff of observers, after the commencement of 1844, therefore, consisted of Mr JOHN WELSH, Mr ALEXANDER HOGG, and myself; Mr DODS assisting in the term-day observations, and on a few occasions during disturbances.

DECLINOMETER.

6. The declination magnetometer was obtained from GRUBB of Dublin. The magnet a is 15 inches long, $\frac{7}{8}$ inch broad, and $\frac{1}{4}$ inch thick; it fits into a stirrup b,



whose two eyes receive an axle to which the suspension thread is attached; near the north extremity it carries a scale divided on glass, c; near the other, at a distance from the scale of about 12 inches, the focal length, it carries a lens of $1\frac{1}{4}$ inch diameter, d. A marble slab m, cemented to the top of the stone pillar p, carries two copper tubes ff, 35 inches long, which are connected at the top by a mahogany tie g, bearing the torsion-circle and suspension apparatus t, and, about 7 inches

from the slab, by another wooden cross-piece *h*, which supports a glass tube *e* enclosing the suspension thread. The magnet is enclosed by a rectangular wooden box *k*, formed of two pieces fitting into each other in the middle by a groove and tongue, glazed at the extremities, and having only a small aperture in the centre for the suspension thread: this box also enclosed a copper ring for checking the vibrations of the magnet; it was removed October 15, 1844, and is not shewn in the figure: a cylindrical wooden drum *i*, together with two lids (not shewn in the figure), fitting by pegs upon the cross-piece *h*, enclose the box and magnet. There are two glazed apertures also in the wooden drum, opposite those in the rectangular box; one to the north, where a small mirror *l* throws light upon the glass scale; the other to the south, between the lens and reading telescope. All the joints of the boxes, including those in contact with the marble slab, are covered with velvet, and both boxes are pressed firmly against the marble slab by means of leaden weights, which were previously determined to have no effect upon the position of the magnet. In order to destroy any effect of radiation, both boxes were covered with gilt paper, externally and internally. The suspension apparatus is covered by a wooden cap (not shewn in the figure). In order to prevent the variation of humidity within the boxes as much as possible, the whole apparatus was covered, February 14, 1844, by a thick double cotton hood, tied round the stone pillar, and having only small openings at the glazed apertures of the boxes. The reading telescope is fixed to a stone pillar; the object glass is 8 feet to the magnetic south of the magnet lens.

7. The pillar of the azimuth circle, used for determinations of the absolute declination, is between the pillars of the magnetometer and its reading telescope. This theodolite is by TROUGHTON; the circle is 15 inches in diameter, is divided to 5 minutes, and is read to 5 seconds with three verniers. The lines of collimation of the theodolite and reading telescopes coincide when the middle wire of the former is seen, in either telescope, coinciding with the vertical wire of the latter. The circle is retained in the same position on its pillar, but the transit telescope is removed, excepting when required for observations of absolute declination.

8. The following are the data used in reducing the observations of the declinometer:—

Values of the declinometer scale divisions in angular measure.

The adopted mean value of one division of the long scale of 500 divisions = 0′·6725*

During the observations of absolute horizontal intensity, the magnet with the long scale, usually in the declination box, was removed to the unifilar box in the intensity house, and a magnet with a short scale was substituted.

The adopted mean value of one division of the short scale of 300 divisions = 0′·7500*

* For details, see Introduction to the Observations for 1843, pp. xiii. and xiv.

From the adopted values of the long and short scale divisions, the coefficient for reducing the divisions of the short scale to the same value as the divisions of the long scale = 1·115; the reciprocal = 0·897.

Scale readings at the magnetic axes of the declinometer magnets, the copper ring or damper being in its place.

The reading for the magnet with the long scale at the magnetic axis = 257·14
.... short scale .... = 147·11*

The copper ring used for checking the vibrations of the magnet was removed October 15^d 4^h—5^h, 1844, as it was found to have an effect upon the magnet, varying with its position.

The adopted zeros of the declinometer scales are as follow:—

Reading of the long scale at the magnetic axis,		257·14
Correction for the effect of the bifilar and balance magnets,	+	0·16
Correction for the effect of the copper ring, Jan. 1^d —Oct. 6^d 23^h, 1844,	−	1·00
.... Oct. 7^d 0^h—Oct. 15^d 4^h, 1844,	−	1·70†
Jan. 1^d —Oct. 6^d 23^h, 1844. Adopted zero for the long scale,		256·30
Oct. 7^d 0^h—Oct. 15^d 4^h, 1844.		255·60
Oct. 15^d 5^h, 1844, and afterwards.		257·30

Reading of the short scale at the magnetic axis,		147·11
Correction for the effect of the bifilar and balance magnets,	+	0·14
Correction for the effect of the copper ring, Jan. 1^d—Oct. 7^d, 1844,	−	0·90†
Jan. 1^d—Oct. 7^d, 1844. Adopted zero for the short scale,		146·35
Oct. 7^d, 1844, and afterwards.		147·25

9. The determinations for the effects of the different magnets upon each other are given in the previous volumes. The plate-glass in the declinometer boxes was found to have no effect upon the reading of the magnet: the effect of the copper ring is allowed for above. The determinations of the corrections are given in the volume for 1843.

10. Correction for the torsion force of the suspension thread.

The errors due to the torsion force of the suspension thread are produced, first, by the magnet moving out of the plane of detorsion; secondly, by the variation of this plane (due generally to the varying humidity of the atmosphere). The error due to the former, even in the most marked cases, is less than the probable error of

* For details, see Introduction to the Observations for 1843, pp. xv. and xvi.

† Ibid., pp. xvii. and xxi.

the observations, and it is altogether inappreciable, compared with the error due to the second.

If the plane of detorsion be that of the magnetic meridian, and the magnet be deflected through an arc u by turning the arms of the torsion circle w, the torsion is $w-u$, and the equation of equilibrium is

$$m \, \mathrm{X} \, u = (w-u) \, \mathrm{H}$$

where m is the magnetic moment of the bar, X is the horizontal component of the earth's magnetic force, and H is the torsion force for an arc equal to radius, whence, if $m \, \mathrm{X} = \mathrm{F}$,

$$\frac{u}{w-u} = \frac{\mathrm{H}}{\mathrm{F}} = \Phi$$

is the quantity by which the deviations of the magnet from the plane of detorsion should be multiplied to obtain the decrements due to torsion. If n be the observed deviation, $\Phi \, n$ = the true deviation. The following are observations for the value of Φ for the suspension thread placed in the instrument, June 22, 1843, and for the long scale magnet :—

Aug. 7ᵈ 2ʰ, 1843. $\mathrm{Arc}^{-1} \, w = \left\{ \begin{matrix} +90^{\circ} \\ -90^{\circ} \end{matrix} \right.$; $\mathrm{arc}^{-1} \, u = \left\{ \begin{matrix} 7'{\cdot}97 \\ 7'{\cdot}90 \end{matrix} \right.$; mean value of Φ = 0·00147.

Dec. 26ᵈ 23ʰ, 1844. $\mathrm{Arc}^{-1} \, w = \left\{ \begin{matrix} +90^{\circ} \\ -90^{\circ} \end{matrix} \right.$; $\mathrm{arc}^{-1} \, u = \left\{ \begin{matrix} 7'{\cdot}47 \\ 7'{\cdot}59 \end{matrix} \right.$; mean value of Φ = 0·00140.

These values have not been used for this correction; the last determination has been employed in the observations of absolute horizontal intensity made in 1844.

11. The second and most important error due to the torsion force is that produced by the variation of the plane of detorsion. Unless when the period and extent of change is known, this can only be corrected by removing it; this is done occasionally in the following manner :—The magnet, with its stirrup, being removed, a brass bar and stirrup of nearly the same weight and dimensions is suspended ; the rectangular box being removed, the cylindrical box being completely closed, and the shutters removed from the glazed lid, the extremities of the arc of vibration are observed through the latter ; the marble slab beneath having radii drawn for every 5° on each side of the magnetic meridian, the positions of rest at the extremities of the arcs are estimated to $\frac{1}{2}$°; the deviation of the mean position from the magnetic meridian is known, and the arms of the torsion circle are turned through an equal angle in the opposite direction ; the position of rest is then in the magnetic meridian. Much time and care were bestowed upon these observations, as the error due to this cause is by far the most serious that occurs in connection with the declinometer.

12. The following are all the observations for the elimination of torsion made in 1844, together with all the occasions on which the magnet was touched or removed from its box. When the mean position of rest for the north end of the brass bar was found to the east of the magnetic north, the torsion existing is considered positive, and the effect of $+10°$ of torsion $= -0'{\cdot}84$ (from the previous observation for the value of $\frac{H}{F}$.) In the first case below, the north end of the brass bar was found to rest 2° east of the magnetic north; and the brass bar was thereafter made to coincide with the magnetic meridian.

Jan. $1^d\ 3^h$—4^h. Torsion removed, $+2°$. Jan. $12^d\ 2^h$—3^h. Torsion removed, $-1\frac{1}{2}°$.

Jan. $26^d\ 21^h$—$27^d\ 7^h$. The magnet with the short scale was used in the declinometer box.

Jan. $27^d\ 2^h$—3^h. Torsion removed, 0°. Feb. $13^d\ 2^h$—3^h. Torsion removed, $+2°$.

Feb. $17^d\ 0^h$—7^h. Short scale magnet in the declinometer box and deflection bar vibrated.

Feb. $23^d\ 3^h$—4^h. Torsion removed, $+1\frac{1}{2}°$. March $22^d\ 23^h$—0^h. Torsion removed, 0°. Afterwards, the short scale magnet was placed in the box, and the deflection bar vibrated.

March $27^d\ 4^h$—5^h. Torsion removed, $+3°$. The suspension thread was found to have stretched a little, it was now wound up two-tenths of an inch, and the torsion again removed as follows:—March $27^d\ 4^h$—5^h. Torsion removed, $+\ 9\frac{1}{2}°$. April $5^d\ 4^h$—5^h. Torsion removed, $-\ 3\frac{1}{2}°$. May $28^d\ 0^h$—1^h. Torsion removed, 0°. May $28^d\ 1^h$—$29^d\ 9^h$. Short scale magnet used in the declinometer box, and after $29^d\ 9^h$, the deflecting bar was vibrated, for the intensity observation, in the declinometer box; afterwards, the torsion was removed as follows:—

May $29^d\ 23^h$—0^h. Torsion removed, $+8\frac{1}{2}°$. Aug. $4^d\ 22^h$—23^h. Torsion removed, $+1°$. Aug. $4^d\ 23^h$—$5^d\ 6^h$. Short scale magnet used in the declinometer box, and the deflection bar vibrated.

Oct. $6^d\ 19^h$—20^h. Torsion removed, $-10\frac{1}{2}°$. This observation was made rather hurriedly, as the hour of observation was approaching: it was conceived that the true amount of torsion might have been less. Oct. 6^d—7^d. Experiments were made to determine the effect of the copper ring on the declination magnet.* Oct $15^d\ 4^h$. Other observations were made for the effect of the copper ring, after which the use of the copper ring was discontinued. Oct. $15^d\ 23^h$—$16^d\ 4^h$. Observations were made to determine the zero point of the declination scale; the amount of torsion was then determined as follows:—

Oct. $16^d\ 4^h$—5^h. Torsion removed, $+9\frac{1}{2}°$. The amount of torsion found is nearly the same in amount as that found Oct. 6^d, but opposite in sign. Nov. 4^d—6^d. The

* See Introduction, 1843, pp. xvii. and xviii.

Observatory was washed and cleaned. The vapour produced during the washing, it is conceived, may have affected the suspension thread as found Nov. 11^d.

Nov. 11^d 23^h—0^h. Torsion removed, $+8\frac{1}{2}°$. Dec. 25^d 23^h—0^h. Torsion removed, $-6\frac{1}{2}°$. Dec. 26^d 0^h—4^h. Short scale magnet used in the declinometer, and deflecting bar vibrated: at 22^h, observations were made for the value of the torsion coefficient of the suspension thread. Upon removing the short scale magnet after Dec. 26^d 4^h, the fibres of the suspension thread became loose, when it is probable that the torsion found at 23^h was introduced.

Dec. 26^d 23^h—0^h. Torsion removed, $+55°$. Dec. 29^d 23^h. Torsion removed, 0°.

Dec. 30^d 0^h—3^h. Short scale magnet used in the declinometer box, and deflecting bar vibrated, after which the torsion was removed as follows:—

Dec. 30^d 3^h—4^h. Torsion removed, $-14°$.

13. The times of vibration of the declination magnets are as follow:—

The time of one vibration of the declination long scale magnet = 17·8^s *
.... short scale ...... = 17·0

14. The observations of the declinometer were made in the following manner:— The points of the scale which coincided with the vertical wire of the reading telescope were noted 18 seconds before the minute of observation, at the minute, and 18 seconds after the minute: the scale readings at these periods being a, b, and c, the mean position is deduced by the formula $\frac{a+2b+c}{4}$. This method was employed till Oct. 15, 1844, when the copper ring for checking the vibrations having been removed, the three scale readings afterwards were always made at the extremities of the arcs of vibration; the first reading being made at that extremity of the vibration which occurred between 27 seconds and 9 seconds before the minute of observation. Even after the copper ring was removed, the arc of vibration was small, seldom above 3′, and generally less than 2′; during disturbances, however, the arc is often considerable, and frequently in these cases only two observations are made, the mean position being obtained at once from the mean of the two readings at the extremities of the vibration which occur between 18^s and 0^s before, and between 0^s and 18^s after, the minute of observation.

15. All the observations of declination in this volume are absolute. They are rendered so as follows:—

The middle wire of the theodolite telescope is brought to coincide with the vertical wire of the fixed reading telescope (7.); the three verniers of the horizontal circle are then read; the theodolite telescope is turned (on the vertical axis of the circle) until its middle wire coincides with the vertical line on the north meridian

* See Introduction, 1843, p. xxi.

mark of Sir THOMAS BRISBANE's (the western) transit in the Astronomical Observatory, and the verniers are again read. In order to obtain the reading of the horizontal circle for the astronomical meridian, the theodolite telescope was placed as nearly as possible in the meridian, and being accurately levelled, the time of the sun's transit was observed by the Magnetic Observatory clock. The sun's meridian passage was also observed by Sir THOMAS BRISBANE with his western transit in the Astronomical Observatory, and the clocks in the two observatories being immediately compared, the true time of transit by the clock in the Magnetic Observatory was obtained. The difference, if any, between the true and observed times, was due to error of azimuth; the latter, being very small, was obtained from the former in multiplying by the factor,

$$\frac{\text{cosine sun's declination}}{\text{cosine sun's altitude}}.$$

16. If A′ be the difference of the horizontal circle readings for the wire of the fixed telescope and for the north mark, Z be the azimuth of the north mark, and D be the angle at any instant contained by the line of collimation of the reading telescope and the adopted zero scale reading, the true westerly declination at that time will be

$$180° - A' + Z \pm D.$$

The values of $180° - A' = A$, obtained in 1844, 1845, and 1846, are given in the following Table :—

TABLE 1.—Determinations of the Value of Angle A.

Date.	Readings of Horizontal Circle: For Wire of Declination Telescope. Verniers A.	B.	C.	Mean.	For North Mark. Verniers A.	B.	C.	Mean.	Angle A.
	′ ″	′ ″	′ ″	° ′ ″	′ ″	′ ″	′ ″	° ′ ″	° ′ ″
1844.									
Feb. 7	53 17·5	53 21·5	53 57·5	233 53 32·2	44 12·5	43 52·5	43 57·5	77 44 0·8	23 50 28·6
May 11	52 2·5	51 52·5	52 8·7	53 52 1·2	42 2·5	42 22·5	42 42·5	257 42 22·5	23 50 21·3
July 1	52 23·0	52 8·0	52 43·0	53 52 24·7	42 35·0	42 52·5	43 10·0	257 42 52·5	23 50 27·8
July 22	52 10·0	52 0·0	52 25·0	53 52 11·7	42 27·5	42 51·2	43 2·5	257 42 47·1	23 50 35·4
Aug. 14	52 40·0	52 18·7	52 46·2	53 52 35·0	42 40·0	43 0·0	43 20·0	257 43 0·0	23 50 25·0
Aug. 14	52 35·0	52 7·5	52 47·5	53 52 30·0	42 40·0	43 1·2	43 25·0	257 43 2·1	23 50 32·1
Aug. 14	53 15·0	52 57·5	53 20·0	53 53 10·8	43 23·7	43 52·5	44 5·0	257 43 47·1	23 50 36·3
Aug. 14	52 55·0	52 51·2	53 37·5	233 53 7·9	43 15·0	43 2·5	43 10·0	77 43 9·2	23 50 1·3
Aug. 14	53 5·0	52 54·0	53 17·5	53 53 5·5	43 22·5	43 51·0	44 2·5	257 43 45·3	23 50 39·8
Oct. 14	52 25·0	52 28·7	53 15·0	233 52 42·9	43 10·0	42 47·5	43 5·0	77 43 0·8	23 50 17·9
Oct. 14	52 27·5	52 28·7	53 12·5	233 52 42·9	43 7·5	42 40·0	42 57·5	77 42 55·0	23 50 12·1
Oct. 14	52 38·7	52 17·5	53 0·0	53 52 38·7	42 37·5	42 57·5	43 25·0	257 43 0·0	23 50 21·3
Oct. 14	52 46·2	52 22·5	52 58·8	53 52 42·5	42 43·7	43 0·0	43 25·0	257 43 2·9	23 50 20·4
Oct. 19	52 11·2	52 13·7	52 58·8	233 52 27·9	42 57·5	42 36·2	42 55·0	77 42 49·6	23 50 21·7
Oct. 19	52 32·5	52 7·5	52 43·6	53 52 27·9	42 52·5	42 56·2	43 16·3	257 53 1·7	23 50 23·8
Oct. 19	52 45·0	52 16·2	52 52·5	53 52 37·9	42 40·0	42 57·5	43 25·0	257 43 0·8	23 50 22·9
Oct. 19	52 41·2	52 35·0	53 20·0	233 52 52·1	43 25·0	42 57·5	43 10·0	77 43 10·8	23 50 18·7
Dec. 31	52 43·7	52 22·5	52 52·5	53 52 39·6	42 52·5	43 13·7	43 35·0	257 43 13·7	23 50 34·1
Dec. 31	52 17·5	52 20·0	53 5·0	233 52 31·2	43 12·5	42 47·5	43 3·7	77 43 1·2	23 50 27·0
1845.									
Jan. 17	52 13·7	52 18·8	52 55·0	233 52 29·2	42 52·5	42 35·0	42 52·5	77 42 46·7	23 50 17·5
Jan. 17	52 15·0	52 18·7	52 59·0	233 52 30·9	42 58·1	42 35·0	42 53·7	77 42 48·9	23 50 18·0
Jan. 17	52 12·5	52 20·0	52 57·5	53 52 40·0	42 55·0	43 17·5	43 37·5	257 43 16·7	23 50 36·7
Jan. 17	52 8·7	52 10·0	52 52·5	233 52 23·4	43 0·0	42 40·0	42 57·5	77 42 52·5	23 50 29·1
Jan. 17	52 25·0	52 2·5	52 37·5	233 52 21·7	42 25·0	42 42·5	43 2·5	77 42 43·3	23 50 21·6
Jan. 17	52 23·7	52 2·5	52 43·1	53 52 23·1	42 38·7	42 55·0	43 15·5	257 42 56·4	23 50 33·3
May 8	52 7·5	52 5·0	52 57·5	233 52 23·3	43 7·5	42 42·5	43 10·0	77 43 0·0	23 50 36·7
1846.									
Apr. 13	48 5·0	47 43·7	47 32·5	53 47 47·1	37 57·5	38 20·0	38 2·5	257 38 6·7	23 50 19·6
Apr. 13	47 28·7	47 8·8	47 32·5	233 47 23·3	38 12·5	37 40·0	37 25·0	77 37 35·8	23 50 12·5
May 7	48 5·0	47 33·7	47 27·5	53 47 42·1	38 2·5	38 22·5	38 5·0	257 38 10·0	23 50 27·9
May 9	47 53·7	47 41·2	48 5·0	233 47 53·3	38 43·7	38 5·0	37 45·0	77 38 11·2	23 50 17·9
May 9	48 17·5	47 20·0	47 20·0	53 47 39·2	37 55·0	38 10·0	37 57·5	257 38 0·8	23 50 21·6

17. The mean value of angle A from all the observations in 1844, 1845, and 1846, ... $=23° \ 50' \ 24''{\cdot}5$

The mean value of angle A from all the observations in 1844, ... $=23° \ 50' \ 23''{\cdot}9$

The value of angle Z (Table 8, Introduction, 1841–2), $= 1° \ 37' \ 38''{\cdot}8$

Whence angle A + Z, ... $=25° \ 28' \ 2''{\cdot}7$

The absolute westerly declination, therefore, corresponding to the zeros of the scales, No. 8, $=25° \ 28'{\cdot}04$. This value has also been employed for the observations in 1845 and 1846. For other scale readings differing from the zero by the angular quantity $\pm$ D, the declination is obtained from the formula, declination $= 25° \ 28'{\cdot}04 \pm D$.

UNIFILAR MAGNETOMETER AND OBSERVATIONS OF THE ABSOLUTE HORIZONTAL INTENSITY OF THE EARTH'S MAGNETISM.

18. In the beginning of April 1843 two small wooden houses were erected about 19 yards to the north of the Magnetic Observatory; the larger of the houses contains the unifilar magnetometer and the dip circle, and the smaller, which is 10 feet to SSE. of the larger, contains a reading telescope for the magnetometer.

The unifilar magnetometer rests on a strongly-braced wooden stand, which is fixed by copper battens and plaster of paris to a stone slab, resting on a stone foundation separated from the floor; the top block of the stand, a solid piece of mahogany, carries a vertical box enclosing the suspension thread and supporting the torsion circle, this box is open on two opposite sides near the stand top; a horizontal box slides on the vertical one, and when close to the stand top the magnet is completely enclosed; an internal box was afterwards added, and all the precautions already indicated (6.) for the declinometer were taken. The magnet used when observations of absolute horizontal intensity were made was that usually in the declinometer, a spare magnet being fitted with a short scale (8.) was substituted for it; the telescope (that intended for a collimator to the bifilar) was placed in the smaller wooden house, on a stand in all respects similar to that for the unifilar: the two houses were connected, during observations, in the line of collimation of the telescope and magnet by a wooden tube blackened within. A beam of straight well-seasoned fir, 11 feet long, $3\frac{3}{4}$ inches broad, and $1\frac{3}{4}$ inches thick, was placed on each side (outside) of the larger wooden house, in the line passing through the centre of the suspended magnet, and at right angles to the magnetic meridian; each beam was let into the tops of two strongly-braced wooden trestles, 7 feet apart, which rested on wooden posts driven into the ground, and which were fixed to the latter by catch-pins, allowing a slight adjustment for the distance of the beams from the magnet; the trestles and beams being removed after each observation. The beams were carefully divided with the aid of a brass standard yard made by Messrs TROUGHTON and SIMMS; the graduations were adjusted to their distance from the suspended magnet in the following manner:—a well-seasoned fir rod, shod with brass at one extremity, and terminated at the other by a capstan-headed screw, by which the rod was accurately adjusted to a length of six feet, was passed through holes in the sides of the wooden house and unifilar box; the middle of the rod coinciding with the suspension thread, the catch pins of the trestles were then loosened or forced in till the extremities of the six-feet rod coincided accurately with the division 3 feet on each beam. The deflecting magnet was adjusted to the graduations on the beams with the aid of a lens; in 1844 the graduations were marked on brass pin-heads placed in the beams. The fixidity of the trestles was verified in general after each observation, and the accuracy of the graduations on the beams was verified usually before each observation.

19. The value of the absolute horizontal intensity is determined from the observations as follows :—If r be the distance from the centre of the suspended magnet, at which the centre of the deflecting bar is placed on the wooden beam, its axis being in the line at right angles to the magnetic meridian passing through the centre of the suspended magnet; and if u be the resulting angle, through which the suspended magnet is deflected, then since, by GAUSS's theory, the ratio of the magnetic moment m of the deflecting bar to X, the horizontal component of the earth's magnetic force, is given by the following formula

$$\frac{m}{\mathrm{X}}=\frac{1}{2}r^3 \tan u \; \frac{1}{1+\frac{p}{r^2}+\frac{q}{r^4}+\text{\&c.}}$$

where p and q are quantities depending on the mode of distribution of the magnetism in the magnetic bars, the value of the ratio may be determined from observations at three distances; it is probable, however, that the deflections are too small in the observations for 1844 to render the consideration of the quantity q of importance: the values of the ratio have in consequence been determined from observations at two distances; if these be r and r', and the corresponding deflections be u and u', then

$$\frac{m}{\mathrm{X}}=\frac{r'^5 \tan u'-r^5 \tan u}{2\,(r'^2-r^2)}$$

tan u being obtained from the formula

$$\tan u=\tan\left[\frac{a}{4}\;\{(\overline{u_1+{}_1u}-\overline{u_0+{}_0u})-f(\overline{d_1+{}_1d}-\overline{d_0'+{}_0d})\}\;(1+\Phi)\right].\;\frac{1+k\,(b_d-b_v)}{1-q\,(t_d-t_v)}$$

where a is the angular value of one division of the long scale, f is the coefficient for reducing the divisions of the short scale to the value of divisions of the long scale; u_1 and ${}_1u$ are the observed mean scale readings of the unifilar magnetometer, the deflecting bar, with its north pole towards the east, being at a given distance to the east and west respectively of the suspended magnet; similarly, u_0 and ${}_0u$ are the mean scale readings when the deflecting bar, at the same distance, has its north pole towards the west: d_1, ${}_1d$, &c., are the simultaneous mean scale readings of the declinometer corresponding to u_1, ${}_1u$, &c.: $1+\Phi$ is the torsion factor. [The quantity within brackets is given for each distance, pages 166 and 167, in the column, Deflection corrected for Torsion.] The last factor reduces the value of the tangent to the value of X and m at the time of vibration, k being the coefficient for reducing the scale divisions of the bifilar magnetometer to parts of horizontal force, b_d and b_v are the mean scale readings of the bifilar at the times of deflection and vibration respectively; q is the temperature coefficient for the deflecting bar, t_d and t_v are the mean temperatures of the bar during deflection and vibration respectively.

The values of log $\frac{1}{2}r^3$ tan u are given for each distance, pages 166 and 167.

20. The following are the values of the constants used in the previous formula:—

$a = 40''.35$ (No. 8.) $f = 1.115$ (No. 8.) $q = 0.000288$.*
Aug. 10—Nov. 9, 1843, $k = 0.00013$. Nov. 9, 1843—Dec. 31, 1845, $k = 0.00014$.
For the thread in the unifilar box and long scale magnet, $\Phi = 0.0012$.

21. The comparative observations for u and d were rendered simultaneous thus: The times of vibration of the unifilar and declination magnets being nearly the same, the time at which the unifilar magnet attained one extremity of its arc of vibration was instantly indicated by me to Mr WELSH, who could observe my motions through one of the north windows of the Observatory. He immediately commenced counting the beats of the mean time clock, and at the end of the 18th second (the time of one vibration) both observers commenced making readings of the magnetometers; those by Mr WELSH being made at the end of the 18th, 36th, 54th, &c., seconds, and those by myself at the extremities of the arcs of vibration. From 7 to 12 consecutive readings were made thus at every position of the deflecting bar, and from these the mean readings are deduced. In order to render the arcs of vibration of the unifilar as small as possible, the deflecting bar was at first moved gradually up to its nearest distance (5 feet); in placing it at the next distance, it was moved rapidly *nearly* half way, and 18 seconds counted, when it was immediately shifted the other half. When the farthest distance was attained, it was placed vertically, and after 18 seconds, laid down in the reverse position; it was then moved as before, by half-shifts, to its next position, and so up to the nearest. After comparative readings for that position, the magnet was again placed vertically, and carried to the beam on the opposite side of the suspended magnet; at the end of 36 seconds it was laid down at the same distance, and with the north pole in the same direction as before. In general, the vibrations were small, seldom above 10′; when larger, the magnet was checked by slightly approaching or removing the deflecting bar at proper times, with reference to the directions in which the suspended magnet was moving. Mr WELSH observed the bifilar magnetometer before and after each comparison, and after each comparison I observed the temperature of the deflecting bar by means of a thermometer lying beside it.

22. The value of the product m X is obtained from the formula

$$m\,\mathrm{X} = \frac{\mathrm{K}\,\pi^2}{\mathrm{T}^2}$$

where π is the ratio of the circumference to the diameter, T is the *true* time of one vibration of the deflecting bar deduced from the *observed* time T′ by the formula

$$\mathrm{T} = \mathrm{T}'\left(1 - \frac{\alpha\,\alpha'}{16}\right)(1+\Phi)^{\frac{1}{2}}\left(1 - \frac{s}{86400}\right)$$

where a and a' are the semiarcs of vibration in parts of radius at commencement

* See Introduction, 1843, p. xliii.

and termination. Φ is the ratio of the torsion force to the horizontal component of magnetic force for the declinometer thread with the deflecting bar suspended, s is the daily rate of the clock in seconds, K is the moment of inertia of the deflecting bar obtained from the formula

$$K = \tfrac{1}{2}\,(r_i^2 + r_e^2)\;M \cdot \frac{T_0^{\,2}}{T_0^{\,2} - T_1^{\,2}}$$

where r_i and r_e are the internal and external radii of a regular metallic ring, M is the mass of the ring in grains, T_0 is the *true* time of one vibration without the ring (obtained by the above formula for T), T_1 is the *true* time of one vibration with the ring placed horizontally on the magnet, and is obtained from the observed time T_1' by the formula

$$T_1 = T_1'\left(1 - \frac{\alpha\,\alpha'}{16}\right)(1+\Phi)^{\frac{1}{2}}\left(1 - \frac{s}{86400}\right)\left\{1 + k\,(b_0 - b_1) - q\,(t_0 - t_1)\right\}$$

where the symbols in the first four factors have the same meaning as given above for T, it being remembered that Φ is the ratio of the torsion force to the horizontal force for the declinometer thread when carrying *both* the deflecting bar and ring. The last factor contains the reduction of the time of vibration to the value of the horizontal component for which T_0 was the time of vibration without the ring; k, therefore, is the bifilar coefficient, given previously, b_0 and b_1 are the mean bifilar readings when the times of vibration T_0 and T_1 were observed, q is the temperature coefficient for the deflecting bar, given above, t_0 and t_1 are the mean temperatures of the bar corresponding to the observations T_0 and T_1. As the observations for deflection are corrected for temperature to the temperature at the time of vibration, the value of m at the time of vibration is taken as the standard value for the series, as far as temperature is concerned, but it requires a correction for the inductive action of the earth, due to the position of the magnet during vibration in the plane of maximum magnetic force; during deflections the magnet is placed at right angles to the magnetic meridian, and is therefore unaffected by induction: the first equation, No. 22, therefore becomes

$$m\,X = \frac{K\,\pi^2}{T^2\left(1 + \frac{\delta m}{m}\right)}$$

$\frac{\delta m}{m}$ is the induction coefficient, and is obtained from the formula

$$\frac{\delta m}{m} = \frac{n + s - 2\,b}{n - s}$$

where n and s are the mean scale readings of the bifilar magnetometer when the deflecting bar is placed in the magnetic meridian with its north end towards the

north and south respectively, its centre being in the prolongation of the bifilar magnet, b is the bifilar reading with the deflecting bar away.

The deflecting bar was vibrated in the declinometer box after the observations of deflection; it was suspended in a stirrup of silk fibres of the same thickness as the suspension thread, and a small thread of paper being gummed to the extremity next the reading telescope, the times of transits of the paper at the wire of the reading telescope towards right and left were observed for every 5 vibrations each way up to the 96th vibration. (See Tables, pages 168 and 169.) A moveable object-glass fits upon the object-glass of the reading telescope, in order to bring the paper slip into view without altering the adjustment of the telescope.

23. The following are the values of the constants used in the preceding formulæ. Φ for the declinometer thread, with the deflecting bar suspended, is obtained from the value when the long scale magnet is suspended by multiplying the latter by the ratio of the moments of the two magnets; thus, moment of long scale magnet is to moment of deflecting bar, as 1·000 is to 0·942, whence, from the values of Φ for the long scale magnet (No. 10), we have for the deflecting bar and declinometer thread,

Aug. 11—Dec. 18, 1843, $\Phi = 0{\cdot}001556$. During 1844, $\Phi = 0{\cdot}001482$.

The rate of the Observatory clock was generally less then 2 seconds a-day. No correction for rate was therefore employed in the determination of T.

24. The following are the details for the determination of K.

The deflecting bar is 1·25 feet ($= a$) in length; 0·0719 feet ($= b$) in breadth; 6216·7 grains in weight ($=$ W). The value of K had been previously determined from the formula $\frac{a^2 + b^2}{12} \times W$. In January 1848, it was thought desirable to determine it by the more accurate formula given previously; as it was doubtful whether the declinometer thread could sustain the deflecting bar and an additional weight, a stronger thread was substituted, for which Φ was determined.

The deflecting bar was vibrated in a stirrup of silk without any appendages, the results are:

Jan. 11[d] 1848. Observations made by chronometer, DENT, No. 1665, rate $-5^{s}{\cdot}0$.
Semiarcs of vibration, $\text{arc}^{-1}\,\alpha = 10\tfrac{1}{2}^{\circ}$ $\text{arc}^{-1}\,\alpha' = 6^{\circ}$. Temperature of bar 38°·4 Fahr.
Mean observed time of one vibration from 160 vibrations, $T_0' = 15^{s}{\cdot}9037$.
Bifilar magnetometer observed every 5^{m} during vibration, mean during vibration corrected for temperature $= 553{\cdot}9$ sc. div.
Deflecting bar with scale and lens suspended in a stirrup of silk as during vibration $\Phi = 0{\cdot}00200$.
Deflecting bar with scale and lens suspended in brass stirrup, $\Phi = 0{\cdot}00193$.
The true value of one vibration, $T_0 = 15^{s}{\cdot}9014$.

The deflecting bar having been placed in a stirrup of silk fibres, of the thick-

ness of the suspension thread, it was vibrated with the vertical circle of the inclinometer balanced horizontally upon it; the results are:

Internal radius of ring = 0·39541 feet. External radius of ring = 0·43779 feet.

Weight of ring = 9628·6 grains.

Semiarcs of vibration, $\text{arc}^{-1}\, \alpha = 12°$, $\text{arc}^{-1}\, \alpha' = 7\tfrac{3}{4}°$, temperature of bar = 38°·0 Fahr.

Rate of chronometer, DENT, No. 1665, $s = -5^s{\cdot}0$.

Mean observed time of one vibration from 120 vibrations, $T_1' = 27^s{\cdot}8006$.

Bifilar magnetometer, observed every 5^m during vibration; mean during vibration corrected for temperature = 569·3 sc. div.

Deflecting bar with scale and lens suspended in brass stirrup $\Phi = 0{\cdot}003966$.

As all the observations for the time of vibration of the deflecting bar had been made previously with the bar suspended in a stirrup of silk fibres, in order to employ the second formula for K, given above, depending on the dimensions and weight of the bar, it was necessary in the present case, to determine the value of K for the same mode of suspension. The two values of Φ given above for the bar suspended in a brass and in a silk fibre stirrup, *without* the ring, give Φ with brass stirrup suspension, to Φ with silk stirrup suspension, as, 193 : 200, whence, from the value of Φ above for brass stirrup suspension and magnet *with* the ring, = 0·003966, we find Φ for silk stirrup suspension and magnet with ring = 0·004109.

Since $b_0 - b_1 = -15{\cdot}4$ sc. div., $k = 0{\cdot}000135$, $t_0 - t_1 = +0°{\cdot}4$, $q = 0{\cdot}000288$.
The true time of one vibration with the ring (reduced to the value of X for T_0) $T_1 = 27^s{\cdot}8403$.

25. From the above, therefore, we find for the deflecting bar without appendages,

$$\text{Log } K_0 = 2{\cdot}9091359 \text{ at the temperature of } 38°{\cdot}4 \text{ Fahr.}$$

The value of K used in the reductions in the present volume has been obtained from K_0 by the formula

$$K = K_0 \{1 + e\,(t_v - 38)\}^2$$

where e is the dilatation of steel for 1° Fahr. = 0·0000068, and t_v is the temperature of the bar during vibration.

From the formula $K = \dfrac{a^2 + b^2}{12} W$, log K = 2·9096331.

26. The following are the observations for the value of the induction coefficient $\dfrac{\delta m}{m}$. Nov 15, 1847. A strong wooden beam having been fixed horizontally in the prolongation of the magnetic axis of the bifilar magnet which lies at right angles to the magnetic meridian, the deflecting bar was mounted in a wooden block having a groove cut to contain the bar; when the deflecting bar was in its place, it was in the same horizontal plane with, its axis was at right angles to, and its centre was in the prolongation of, the axis of the bifilar magnet. The block was fixed to the

wooden beam: the deflecting bar when removed and replaced, was carried with a thick cloth glove or silk handkerchief, to prevent variation of temperature in handling. In reversing the magnet, the same side was always kept next the bifilar magnet.*

TABLE 2.—Determination of the Induction Coefficient for the large Deflecting Bar.

Göttingen Mean Time.	Position of Deflector.	Bifilar Reading.	Interpolated Reading, Deflector Away.	Deflection.	Sum of Deflections.	Difference of Deflections.	Value of $\frac{\delta m}{m}$
d. h. m.		Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	
1847.							
Nov. 5 0 11	Away	157·12					
15	N. Pole S.	265·35	156·05	109·30	221·70	3·10	0·0140
19	N. Pole N.	42·57	154·97	112·40			
23	Away	153·90					
0 24	Away	154·22					
27½	N. Pole S.	263·60	154·95	108·65	220·65	3·35	0·0152
30	N. Pole N.	43·47	155·47	112·00			
33	Away	156·10					
0 36	Away	156·75					
40¾	N. Pole S.	266·90	157·32	109·58	220·55	1·39	0·0063
44	N. Pole N.	46·75	157·72	110·97			
48	Away	158·20					
Nov. 6 1 12	Away	150·50					
15	N. Pole S.	259·12	150·42	108·70	219·48	2·08	0·0095
18	N. Pole N.	39·57	150·35	110·78			
21	Away	150·27					
1 23	Away	150·75					
26	N. Pole S.	259·46	150·97	108·49	220·00	3·02	0·0138
29	N. Pole N.	39·67	151·18	111·51			
33	Away	151·47					
1 34	Away	151·27					
37	N. Pole S.	261·10	151·44	109·66	220·66	1·34	0·0061
40	N. Pole N.	40·60	151·60	111·00			
43	Away	151·77					
1 45	Away	152·17					
48	N. Pole S.	260·97	151·98	108·99	220·87	2·89	0·0131
50	N. Pole N.	39·97	151·85	111·88			
54	Away	151·60					

27. The adopted value of $\frac{\delta m}{m} = 0{\cdot}0112$.

This value is very large, more than twice as great as that obtained for small 4-inch bars, and is evidently not to be neglected in the rudest mode of observation for the horizontal intensity.

28. In consequence of the more accurate determination of the value of K, the moment of inertia of the deflecting bar, and of k the bifilar coefficient, and on account of

* It will in general be preferable to place the deflecting bar to the east or west (as in the present observations), rather than to the north or south of the bifilar magnet, since I have found that the centre of figure may differ considerably from the centre of magnetism; perhaps, for the same reason, when observations are made only on one side of the bifilar magnet, the deflecting bar should be inverted when it is reversed, since the magnetic axis may be nearer one side of the bar than the other.

the omission of the correction for the induction coefficient, the observations for 1843 have been recomputed by the formulæ given in the preceding pages; the results will be found in the following Table. The value of X from each pair of deflections is reduced to the mean bifilar reading for the year. The bifilar was adjusted in the year 1843, and the reduction of the bifilar scale readings for 1843 (column 6, Table 3) to the mean for the year was made as follows:—f being the value of the bifilar reading (column 6) obtained by the formulæ after Table VIII., p. 230, 1843; 0·002618 being the mean for 1843 obtained from line 7, p. 231, 1843; and 1·316 (see No. 40) being the factor for reducing the quantities, Table VIII., p. 229, 230, 1843, to their true values; the reduction of X (column 5, Table 3) to the mean for 1843

$$= 1 + 1{\cdot}316\,(f - 0{\cdot}002618)$$

The reduction of X for 1844 is made by the factor

$$1 + 0{\cdot}000135\,(b - 527{\cdot}9)$$

b being the bifilar reading column 6 for 1844, and 527·9 being the mean bifilar reading for 1844.

TABLE 3.—Results of the Observations for the Absolute Horizontal Intensity, in 1843 and 1844.

Date.	Pairs of Distances.	Log $\frac{m}{X}$	Log m X.	X.	Bifilar Reading.	X Reduced to Mean Bifilar.	Mean of Group.	Weight.
1843.	Feet. Feet.				Sc. div.			
Aug. 11	5·0 and 6·5	0·465366	1·517261	3·3570	511·5	3·3526	3·3512	1
	5·5 — 6·5	0·466084		3·3542		3·3498		
Aug. 21	5·0 — 6·5	0·461487	1·519634	3·3812	511·1	3·3770	3·3807	3
	5·5 — 7·0	0·460922		3·3834		3·3792		
	5·5 — 7·5	0·461249		3·3821		3·3779		
	6·0 — 8·0	0·457371		3·3973		3·3930		
	6·5 — 8·5	0·459456		3·3891		3·3849		
	7·0 — 9·0	0·462511		3·3772		3·3730		
	7·0 — 9·5	0·460677		3·3844		3·3801		
Nov. 8	5·0 — 6·0	0·464232	1·520430	3·3736	510·9	3·3695	3·3732	3
	5·0 — 6·5	0·463155		3·3778		3·3737		
	5·25 — 7·0	0·462200		3·3815		3·3774		
	5·5 — 7·5	0·463487		3·3765		3·3724		
Nov. 14	5·125 — 6·75	0·457337	1·515526	3·3814	507·6	3·3779	3·3757	2
	5·25 — 7·0	0·458435		3·3771		3·3736		
Dec. 18	5·0 — 6·625	0·456307	1·516321	3·3885	515·2	3·3858	3·3813	2
	5·25 — 7·0	0·458598		3·3796		3·3769		
1844.								
Feb. 17	5·0 — 6·75	0·458660	1·517407	3·3836	524·6	3·3851	3·3851	1
Mar. 23	5·125 — 6·75	0·459748	1·515895	3·3734	520·8	3·3768	3·3793	2
	5·5 — 7·25	0·458444		3·3785		3·3819		
May 29	5·125 — 6·75	0·450795	1·510367	3·3868	535·7	3·3831	3·3816	2
	5·5 — 7·25	0·451555		3·3838		3·3801		
Aug. 5	5·125 — 6·75	0·451689	1·512270	3·3907	540·7	3·3846	3·3852	2
	5·25 — 6·875	0·451379		3·3919		3·3858		
Dec. 26	5·083̇ — 9·7083̇	0·457975	1·516858	3·3841	539·5	3·3786	3·3789	2
	5·25 — 9·83	0·458462		3·3822		3·3767		
	5·5 — 10·25	0·457238		3·3870		3·3815		
Dec. 30	5·083̇ — 9·7083̇	0·459337	1·516483	3·3773	534·9	3·3740	3·3727	2
	5·25 — 9·833̇	0·459976		3·3748		3·3715		

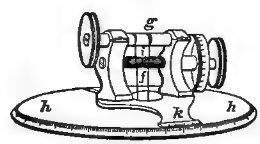
29. Giving the means of groups, column 8, the weights in column 9, we find

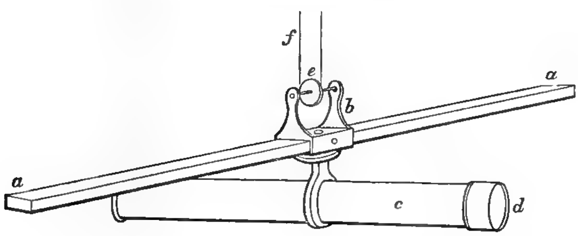
Mean value of X for 1843 reduced to mean bifilar reading for 1843,	=3·3752
.... for 1844 1844,	=3·3801
These give the secular change from 1843 to 1844 in parts of X,	=0·00145
The secular change from the bifilar magnetometer, p. 356,	=0·00389

From the observations, therefore, of the absolute value of X it would appear that the secular change indicated by the bifilar magnetometer from 1843 to 1844 is too great.

BIFILAR OR HORIZONTAL FORCE MAGNETOMETER.

30. This instrument was made by GRUBB of Dublin, and is similar in its general construction to the declinometer, having two boxes, gilt internally and externally as





in the latter instrument. The magnet *a a*, whose dimensions are 15 inches, $\frac{7}{8}$ inch, and $\frac{1}{4}$ inch, is placed in a stirrup *b*, which carries below it a tube *c*, having a lens *d* at the extremity next the reading telescope, and a glass scale at the other : the scale has 280 divisions, and the graduation at the 300th division; increasing readings of the scale indicate increasing magnetic force; the axle of a grooved wheel *e* fits into the suspension eyes of the stirrup *b*; the magnet, with these appendages, is borne by a silver wire *f*, passing round the grooved wheel, and having its two extremities pegged into a suspension roller *g*: the roller is supported by the torsion circle *h*, which also bears, beneath the roller, a micrometer-headed screw *i*, right-handed where it meets one extremity of the wire, left-handed where it meets the other. The screw serves to render the distance of the extremities of the wire equal to the diameter of the grooved wheel; the screw and suspension roller turn with the verniers *k*. A copper ring encircles the magnet, in order to check the vibrations. A thermometer by ADIE and SON is enclosed by a glass tube passing through both boxes, the stem

of the thermometer, with the graduations, being above the lid of the outer box; the bulb of the thermometer rests in a cup, formed in a brass bar of the same dimensions as the bifilar magnet; the brass bar is supported on a wooden stand, and lies parallel to the magnet; the bulb of the thermometer is also covered loosely by a small brass cap. It was found from comparative observations (p. xxx., Introduction, 1843) that a thermometer, with its bulb free, would differ 1° from the thermometer resting in the brass bar in the course of a daily change of 10° of temperature. The whole instrument was covered with a double thick cotton cover Jan. $31^d\ 6^h$ 1844. The reading telescope is fixed to a stone pier, 8 feet south of the magnet.

31. In the adjustment of the instrument, the magnet is forced to a position at right angles to the magnetic meridian, by turning the arms of the torsion circle. As, in forcing the magnet from the meridian, the upper extremities of the wire will move through a greater angle than the lower extremities, the wires will be no longer vertical, and the magnet and appendages will be raised; the forces producing equilibrium will, therefore, be the weight suspended endeavouring to attain the lowest point, and the horizontal component of the earth's magnetic intensity acting on the free magnetism of the bar.

32. If v be the excess of the angular motion of the arms of the torsion circle, or upper extremities of the wire, over u, that of the lower extremity or magnetic bar in moving the latter from the meridian, the equation of equilibrium will be

$$m\ \mathrm{X} \sin u = \mathrm{W} \frac{a^2}{l} \sin v$$

m, X, W, a, and l being respectively the magnetic moment of the bar, the horizontal component of the earth's magnetic force, the weight suspended, the interval, and the length of the wires. The differential of this equation ($u = 90°$) divided by it, gives

$$\frac{\Delta\ \mathrm{X}}{\mathrm{X}} = n\ \alpha \cot v + t\,(\mathrm{Q} + 2\,e - e')$$

n being the number of scale divisions from the zero, or scale reading when u=90°, a the arc value in parts of radius of one scale division, t the number of degrees Fahrenheit which the temperature of the magnet is above the adopted zero, Q the coefficient of the temperature correction for the varying magnetic moment of the bar or the value of $\frac{\Delta\ m}{m}$ for 1° Fahr., e and e' the coefficients of expansion for the brass of the grooved wheel and silver of the wires.

33. It is assumed, in the previous investigation, that the suspending wire does not act by any inherent elastic force; that the torsion force depends wholly on the length and interval of the two portions of the wire and the angle of twist: it seems extremely probable that this condition will not be rigorously sustained, and it is very possible that there may be considerable twist in the suspending wire or thread;

for this reason, the following methods, which are independent of the angle of torsion, were employed to determine the coefficient :—

34. If the equation of equilibrium for the bifilar magnet at right angles to the magnetic meridian be

$$m\,X = F, \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (1.)$$

and if a magnet whose magnetic moment is M be placed with its axis in the magnetic meridian passing through the centre of the bifilar bar, the centres of the two bars being at a distance r, and the resulting angle of deflection be n scale divisions $= \Delta\, v$, the equation of equilibrium will be

$$m\left\{X + \frac{2\,M}{r^3}\left(1 + \frac{p}{r^2} + \frac{q}{r^4}\right)\right\} \cos \Delta\, v = F'.$$

For a value of the earth's horizontal force $X + \Delta X$, which would alone have produced the deviation $\Delta\, v$, we have

$$m\left(X + \Delta X\right) \cos \Delta\, v = F';$$

whence

$$\frac{\Delta X}{X} = \frac{2\,M}{X}\left(\frac{1}{r^3} + \frac{p}{r^5} + \frac{q}{r^7}\right) \quad . \quad . \quad . \quad . \quad . \quad . \quad (2.)$$

If the deflecting bar be now employed to deflect a freely-suspended unifilar magnet, in order to determine the value of $\frac{M}{X}$, as in the ordinary observations for absolute horizontal intensity; u being the angle of deflection for a distance r_1 we have

$$\frac{2\,M}{X} = r_1^{\,3} \tan u \,\frac{1}{1 + \frac{p_1}{r_1^{\,2}} + \frac{q_1}{r_1^{\,4}}}$$

If the bifilar and unifilar bars are of the same dimensions p and q, which are quantities depending upon the distribution of the magnetism in the bars, may be considered equal to p_1 and q_1, and if the deflections for both bars be made at the same distances, or $r = r_1$ then

$$\frac{\Delta X}{X} = \tan u,$$

and

$$k = \frac{\tan u}{n} \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad . \quad (3.)$$

If, however, the bifilar and unifilar magnets are of different dimensions, the value of $\frac{2\,M}{X}$ should be obtained from the deflections of the unifilar at different distances, p_1 and q_1 being eliminated; that value being substituted in equation (2.), and deflections of the bifilar being obtained for different values of r, p and q also may be eliminated.

35. When the observations for 1843 were nearly through the press, observations of deflections of the bifilar magnet were made at two distances; observations of deflection of a unifilar magnet were also made; the dimensions of the bifilar and unifilar bars were very different, but, as the results for the two distances computed by equation (2.) were very nearly equal, it was considered that the differences between p, q, and p_1, q_1, might be neglected; the abstracts were accordingly formed with the aid of the coefficient so obtained. It was discovered, after the volume was published, that the difference of the distances employed was too small to exhibit the error of the assumption that $p=p_1$, &c. In consequence of this error, the coefficient has been redetermined by different methods, as follow :—

36. Wooden beams having been placed in the prolongations of the bifilar magnet, and at right angles to these, lines were drawn upon them, passing through the centre of the magnet,—one in the magnetic meridian, the other at right angles to it; several distances from the centre of the suspended magnet were marked off on each side with a beam compass; a similar structure was erected for the declinometer. The following observations were then made :—

1st, A cylindrical magnet, 3·65 inches long, was employed to deflect the bifilar and declinometer magnets; these two magnets are of the same dimensions, 15 inches long, and were obtained at the same time from the same maker. The short deflecting bar was placed at different distances to the east, and at the same distances to the west, of the bifilar bar, and the deflections of the bifilar were observed in scale divisions. Observations of deflection of the declinometer magnet were then obtained with the same deflector—the deflector, however, being placed at the same distances, as in the other case, to the north and south of the declinometer magnet: in both cases, the prolongation of the suspended bar, in its normal position, passes through the centre of the deflector. The results are obtained in the 1st portion of Table 4.

2d, The same deflecting bar was placed to the north and south of the bifilar magnet, and to the east and west of the declinometer magnet, the prolongation of the axis of the deflector in both cases passing through the centre of the suspended bar. The results are given in the 2d portion of Table 4.

3d, A large deflecting bar (15 inches long) was employed in the same manner as the small bar in the 1st instance.

4th, The large deflecting bar was employed in the same manner as the small bar in the 2d case.

In the 3d case, deflections of the bifilar could only be obtained to the E, and, in the 4th case, to the S of the bifilar magnet, owing to the proximity of the bifilar to the walls of the Observatory. It was easy, however, from the observations with the small bar to make the requisite corrections for the difference of deflection on the opposite sides: the correction is small. The results for the 3d and 4th cases are contained in the 3d and 4th portions of Table 4.

TABLE 4.—Observations of Deflection for the Determination of the Coefficient of the Bifilar Magnetometer.

No. of Series.	Deflections of Bifilar Magnet.					Deflections of Declination Magnet.					Resulting Value of k.
	Date.	Distance.	Deflection.	Mean.	Therm.	Date.	Distance.	Deflection.	Mean.	Therm.	
	1847.	Feet.	Sc. Div.	Sc. Div.	°	1847.	Feet.	Sc. Div.	′ ″		
1	May 11	2·2 E W	133·4 138·5	136·0	53·6	May 14	2·2 N S	94·30 92·25	62 43	62·6	0·0001345
	May 13	2·7 E W	64·4 66·4	65·4	61·9	May 14	2·7 N S	45·85 45·00	30 33	62·6	0·0001359
	May 12	3·267 E W	34·3 35·4	34·9	58·5	May 14	3·267 N S	24·20 23·70	16 6	62·6	0·0001342
2	May 11	2·5 N S	118·4 119·6	119·0	53·9	May 15	2·5 E W	81·60 82·40	55 9	60·0	0·0001350
	May 13	3·167 N S	60·9 60·7	60·8	60·9	May 15	3·167 E W	42·05 42·75	28 31	60·0	0·0001364
	May 12	4·583 N S	21·0 21·0	21·0	56·4	May 15	4·583 E W	14·34 14·58	9 43	60·0	0·0001346
3	May 15	6·917 N S	…… 119·8	119·8	……	May 15	6·917 E W	82·56 82·84	55 37	61·5	0·0001351
	May 15	8·209 N S	…… 71·4	71·4	……	May 15	8·209 E W	50·13 49·88	33 38	61·5	0·0001370
4	May 19	5·5 E W	125·1 ……	126·0	55·2	May 15	5·2 N S	102·48 103·28	69 11	61·8	0·0001350
	May 19	7·792 E W	42·9 ……	43·0	55·2	May 15	6·833 N S	…… 44·23	29 45	61·8	0·0001357

37. *5th*, In May and August 1847, a theodolite magnetometer by Mr JONES of London was converted into a unifilar horizontal force magnetometer, the suspended bar having been deflected through an angle $(u - \delta)$ as in Dr LAMONT'S method, the variations of horizontal force were deduced from the scale readings, reduced to angular measure by the formula

$$\frac{\Delta X}{X} = -\cot(u - \Delta)\ (\Delta u - \Delta \delta) + q\,(t - t_0)$$

where u is the angle which the deflected magnet makes with the *astronomical* meridian (negative when to the east) and δ is the westerly declination, Δu being the arc value of the change of reading, and $\Delta \delta$ the arc value of the simultaneous change of declination obtained from the declinometer: q being the temperature coefficient of the deflecting bar ($=0·00021$), t_0 the standard temperature of the deflecting bar, and t the temperature of observation.

In May 1847, only three comparisons of the two instruments were obtained

during a moderate magnetic disturbance; the results are given as a specimen of the accuracy that may be expected from this method.

Date.	Bifilar Corrected.	u	δ	$(\Delta u - \Delta \delta)$ $\times$ cot 39° 40′	t	$q\,(t-t_0)$	k
	Sc. Div.	° ′	° ′				
May 7ᵈ 22ʰ 0ᵐ	479·9	−14 42·88	25 16·82		48·4		
				+0·007114		−0·000063	0·0001328
23 30	533·0	−14 29·56	25 9·86		48·7		
				+0·005331		−0·000084	0·0001344
8 1 32	571·9	−14 20·28	25 4·00		49·1		

The mean of the two values of $k = 0·0001336$.

In August 1847, a series of comparative observations were made of the bifilar and a unifilar horizontal force magnetometer: these observations were made every hour for three days; the results were grouped so as to obtain the greatest differences of readings for comparisons; the mean angle of deflection of the unifilar $(u-\delta)$ was equal to 65°. The final result of the whole groups was, that the changes of the unifilar scale readings were to those of the bifilar scale readings as 1 to 0·974, the value of k for the unifilar being 0·0001389, therefore that of k for the bifilar = 0·0001353. The changes of horizontal force from which this result was deduced were small.

38. The following, then, are the values of k, deduced by the five different processes above:—

Short deflector, E. and W. of bifilar magnet, and	N. and S. of declination magnet,		$k=0·0001349$
.... N. and S.	....	E. and W.	$k=0·0001353$
Large deflector, E.	....	N. and S.	$k=0·0001360$
.... S.	....	E. and W.	$k=0·0001353$
Comparisons of unifilar and bifilar horizontal force magnetometers,			$k=0·0001353$

The mean of all the results gives $k=0·0001354$

The adopted value of $k=0·000135$

39. The value of the coefficient deduced from the angle of torsion of the suspending wire is

$$1847. \quad k = a \cot v = 0·00032675 \times \cot 69°·3' = 0·0001251.$$

The ratio of the true value of k to that determined by the angle of torsion $= \frac{135}{125} = 1·08$.

40. The true values of k from 1841, obtained from the formula $1·08 \times a \cot v$ are given below:—

July 11ᵈ 20ʰ 1841—July 23ᵈ 5ʰ 1841, ...	$k=0·000128$
Aug. 4 20 1841—Sept. 7 5 1841, ...	$k=0·000164$
Sept. 7 20 1841—Sept. 30 5 1841, ...	$k=0·000158$
Oct. 6 20 1841—Oct. 19 28 1841, ...	$k=0·000141$
Oct. 19 23 1841—April 27 4 1843, ...	$k=0·000135$
April 28 2 1843—Nov. 8 22 1843, ...	$k=0·000130$
Nov. 10 8 1843—Dec. 31 12 1844, ...	$k=0·000140$

In order to reduce the variations of the horizontal component given, pages 229 to 238, in the volume for 1843, to their true values in parts of the whole horizontal component, they must be multiplied by the factor 1·316.

41. The bifilar magnet was adjusted November 10ᵈ 1843, when the angle v was found = 68° 18′, the bifilar scale reading 173. The angle v remained unaltered, excepting for short periods during disturbances, till January 1, 1846.

42. During considerable disturbances the collimator scale, which contains too small an angle, goes out of the field of the reading telescope, it was found necessary in these cases to turn the arms of the torsion circle until it reappeared; afterwards the arms of the torsion circle were turned to their original position: experiments were made in the end of 1842, during periods of slight change, which shewed, after turning the arms of the torsion circle a few degrees in either direction, that on recurring to the original value of v, the scale readings were unaltered. If β be the small angle through which the arms of the torsion circle are turned, n be the scale reading *minus* 170 (the adopted scale zero), then N, the number of scale divisions from the zero (corrected for temperature) for the same force when $\beta = 0$, is obtained from the formula,*

$$N = \frac{2\sin\frac{\beta}{2}}{a\cos v}\cos\left(v+\frac{\beta}{2}\right) + n\,\frac{\cos(v+\beta)}{\cos v} + t\,q'$$

$$= \qquad A \qquad + n\,B \qquad + t\,q'$$

β is considered negative when v is diminished, n is negative when the reading is below the zero (170), t is the temperature of the magnet minus 26°, and q' is the temperature coefficient in scale divisions.

43. The arms of the torsion circle were turned during the disturbance, November 16, 1844,† as follows:

		Sc. Div.	
Nov. 16ᵈ 6ʰ 20ᵐ— 37ᵐ	$\beta = +\,1°\ 8'$	A = + 59·0	B = 0·950
16ʰ 6ʰ 38ᵐ— 45ᵐ	$\beta = +\,2°\ 43'$	A = + 136·4	B = 0·880
16ᵈ 6ʰ 46ᵐ—17ᵈ 3ʰ	$\beta = +\,1°\ 13'{\cdot}5$	A = + 63·7	B = 0·946

17ᵈ 3ʰ. The arms of the torsion circle were turned to their original position.

44. The mean time of one vibration of the bifilar magnet, is between 26ˢ and 27ˢ: the natural arc of vibration is generally very small, and when considerable, the time of vibration was found less than from large artificial vibrations.‡ 25ˢ has been used in the observations for 1844.

* Introduction, 1843, p. xxxiii.

† In 1847, it was found more convenient during disturbances, to bring the scale of the bifilar magnet into the field of the reading telescope, by means of a small deflecting magnet placed on a beam of wood at known distances from the centre of the bifilar magnet. The effect of the deflecting magnet was afterwards determined with the aid of a second deflecting bar.

‡ Introduction, 1841–2, pp. xxviii., xxix.

45. The observations of the bifilar were made as follows: The point of the scale coinciding with the vertical wire of the fixed telescope is estimated to the tenth of a scale division at 25^s before the minute of observation, at the minute, and 25^s after it; the three readings being a, b, and c, the mean is deduced from the formula $\frac{a+2b+c}{4}$. The mean thus obtained is corrected to the temperature of 26° Fahr., a constant quantity of 300·0 has been added to all the corrected means. If N be the observed mean, and t be the observed temperature of the bifilar bar, the corrected means n, given pages 1 to 170, are obtained from the formula

$$n = \mathrm{N} + 300{\cdot}0 + (t - 26^\circ)\,1{\cdot}90$$

1·90 being the temperature coefficient in scale divisions.

The means f in parts of the whole horizontal force given in the abstracts of results, pages 355 to 373, are obtained by the formula

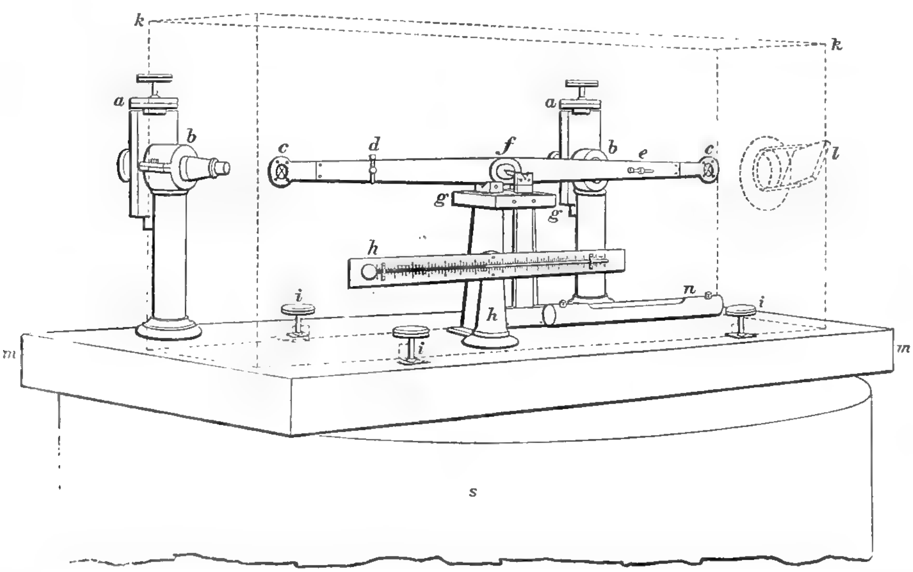
$$f = (n - 500)\,0{\cdot}000140$$

0·000140 being the value of k for 1844.

No correction has been applied for the effect of the balance magnet, which is constant.

BALANCE OR VERTICAL FORCE MAGNETOMETER.

46. The balance magnetometer was made by ROBINSON of London; it is composed of a magnetic needle $c\,f\,c$, 12 inches long, about $\frac{3}{4}$ inch broad, and about $\frac{1}{16}$



inch thick, with knife-edged axle f, which rests upon agate planes; brass rings $c\ c$ are attached to the extremities of the needle, each ring carrying a cross of spider threads.

The needle is placed at right angles to the plane of the magnetic meridian, it is accurately adjusted to horizontality by a screw *e* which balances the needle, another screw *d* working vertically, regulates its sensibility. The apparatus, and a thermometer *h* which gives the temperature of the needle, is covered by a rectangular box *k* having glazed openings on both sides opposite the spider crosses; those on one side allowing light to be thrown on the crosses from two small mirrors, (one of which *l* is indicated in the figure); those on the other, for viewing them and determining their position, which is done accurately by the microscopes *b b* carrying micrometers; the micrometer heads *a a* are divided into 50 divisions. The supports *g* of the needle are fixed to a marble slab *m*, cemented to the stone pillar *s*; the horizontality of the slab is indicated by a level *n*, the lower edge of the rectangular box is covered with velvet, and it is screwed hard to the slab by the screws *i i*. A four-fold cover of thick cotton cloth was placed over the rectangular box, July 18^d, 12^h 1844, in order to keep the temperature as uniform as possible; the box itself is covered with gilt-paper internally and externally. The large copper stove which was heated for the last time, January 3^d, 1844, and which occupied a position about 7 feet from the balance magnetometer (see Plate I.), was removed from the Observatory, Nov. 4^d 23^h, 1844; it was found to have no effect upon the balance needle.

47. If m be the moment of free magnetism of the needle, Y the vertical component of the earth's magnetic force, G the weight of the needle into the distance of its centre of gravity from its centre of motion, and ϵ the angle contained by the line joining these two centres and the magnetic axis of the needle, the latter being horizontal, the equation of equilibrium is

$$m\,\mathrm{Y} = \mathrm{G}\cos\epsilon$$

differentiating this equation, dividing by it, and having regard to the sign of $\Delta\,\epsilon$

$$\frac{\Delta\,\mathrm{Y}}{\mathrm{Y}} = \tan\epsilon\;\Delta\,\epsilon - \frac{\Delta\,m}{m}$$

where

$$\tan\epsilon = \cot\theta\,\frac{\mathrm{T}'^2}{\mathrm{T}^2}$$

where θ is the magnetic dip, T′ is the time of one vibration of the needle in a horizontal plane, and T is the time of one vibration in a vertical plane.* $\Delta\,\epsilon$ is obtained from the observations in micrometer divisions, one division being $= 0'{\cdot}1003$.†

The time of one vibration in the horizontal plane, $\mathrm{T}' = 12^s{\cdot}00$.‡

Time of vibration in the vertical plane.

The needle being in its usual position on the agate planes, the moveable wire of the left micrometer is made to bisect the spider-cross; the needle is then vibrated by means of a small piece of steel, through an angle of about 40 micrometer divi-

* See Dr LLOYD's Account of the Magnetical Observatory of Dublin, p. 38.

† Introduction, 1843, p. xxxviii. ‡ Introduction, 1841–2, Table 15, p. xxxv.

sions or 4′, and the periods of the cross passing the wire, are estimated to a tenth of a second (See Table 12, Introd. 1843, p. xxxix.) The arc of vibration at the commencement was measured by means of the right micrometer, it was usually taken very small on account of the difference in the times of vibration with difference of arc (afterwards noticed, 54), although it is now certain that large arcs of vibration give a time which satisfies better the previous equation and the true coefficient of the instrument.

The following Table contains the observations for the value of T made in 1844. The number of vibrations observed, is given in the column after that containing the arc of vibration at commencement.

TABLE 5.—Values of T, the Time of Vibration of the Balance Needle in a Vertical Plane, with the Temperature of the Needle.

Göttingen Mean Time.	Arc of Vib.	No. of Vib.	Time of Vib.	Temp.	Göttingen Mean Time.	Arc of Vib.	No. of Vib.	Time of Vib.	Temp.
d. h.	′		s.	°	d. h.	′		s.	°
Jan. 0 22	3·5	40	9·31	38·3	Feb. 1 22	4·0	25	9·28	34·6
Jan. 2 22	2·8	20	8·91	31·4	Feb. 2 22	4·2	20	9·40	35·7
Jan. 3 2	4·4	30	9·48	40·0	Feb. 5 1	3·1	15	9·22	33·7
Jan. 3 4	4·6	15	9·80	43·5	Feb. 5 22	3·9	20	9·07	31·3
Jan. 3 5	5·0	13	9·96	45·2	Feb. 6 23	3·2	20	9·22	34·4
Jan. 3 22	4·0	30	9·74	41·4	Feb. 7 22	3·8	30	9·22	34·4
Jan. 4 22	4·2	20	9·67	41·2	Feb. 8 22	3·3	20	9·14	36·7
Jan. 5 22	3·7	20	9·97	46·5	Feb. 9 22	3·8	20	9·13	34·5
Jan. 7 22	3·8	30	9·42	39·6	Feb. 11 22	3·6	10	8·87	32·6
Jan. 8 22	2·6	15	9·38	39·3	Feb. 12 22	4·0	20	8·99	34·3
Jan. 9 23	4·3	20	9·22	37·5	Feb. 13 22	3·1	20	8·87	38·6
Jan. 10 22	4·0	10	9·52	40·8	Feb. 14 22	3·1	20	9·11	43·7
Jan. 11 22	4·2	30	9·49	43·9	Feb. 15 22	3·0	20	9·20	39·6
Jan. 12 22	3·1	15	9·48	38·4	Feb. 16 22	2·8	20	9·04	42·6
Jan. 14 22	3·8	15	9·12	32·6	Feb. 18 22	2·9	20	9·05	42·2
Jan. 15 23	4·4	20	9·01	34·1	Feb. 19 23	4·6	10	8·78	33·3
Jan. 16 22	3·0	30	8·90	34·9	Feb. 20 22	2·9	20	8·76	32·4
Jan. 17 22	3·5	15	9·15	36·9	Feb. 21 23	3·1	20	8·45	27·6
Jan. 18 22	3·1	30	9·35	43·0	Feb. 22 23	4·2	15	8·62	30·4
Jan. 19 23	2·8	30	9·29	36·9	Feb. 24 1	3·3	20	8·80	37·1
Jan. 21 22	3·6	20	9·33	37·6	Feb. 25 22	4·2	20	8·69	32·9
Jan. 22 22	4·7	20	9·42	40·4	Feb. 26 22	4·0	30	8·42	28·0
Jan. 23 22	3·4	30	9·26	36·4	Feb. 27 22	3·4	20	8·70	34·4
Jan. 24 21	2·2	20	9·50	44·0	Feb. 28 22	2·6	20	9·15	38·5
Jan. 25 22	4·0	30	9·54	41·2	Feb. 29 22	3·8	20	9·07	39·3
Jan. 26 22	3·2	30	9·58	45·0	Mar. 1 22	3·2	20	9·33	38·8
Jan. 28 13	2·7	20	10·14	43·5	Mar. 3 23	3·2	20	9·17	39·0
Jan. 28 22	3·4	35	9·67	40·8	Mar. 4 23	4·2	20	8·91	34·0
Jan. 29 4	2·8	20	9·69	41·9	Mar. 5 22	4·0	20	8·95	35·2
Jan. 29 22	2·9	40	9·84	43·2	Mar. 6 23	4·3	10	9·04	36·5
Jan. 30 22	3·6	30	9·50	36·9	Mar. 8 0	2·9	15	9·08	37·5

Jan. 0^d 22^h. The needle comes to rest very soon after being vibrated.
Jan. 27^d. Needle removed for the purpose of determining its temperature correction by the method of deflections.
Jan. 28^d 22^h. The needle seems to have a natural tendency to vibrate.
Feb. 21^d 23^h, 26^d 22^h, 27^d 22^h. The needle comes very soon to rest after being vibrated.

TABLE 5.—*continued.*

Göttingen Mean Time.	Arc of Vib.	No. of Vib.	Time of Vib.	Temp.	Göttingen Mean Time.	Arc of Vib.	No. of Vib.	Time of Vib.	Temp.
d. h.	′		s.	°	d. h.	′		s.	°
Mar. 8 22	3·5	20	9·34	43·5	Apr. 29 22	3·1	15	9·04	49·9
Mar. 10 22	3·5	20	9·08	43·2	Apr. 30 7	4·4	25	9·50	60·5
Mar. 11 22	4·1	20	9·04	37·8	Apr. 30 7½	4·0	15	10·03	61·0
Mar. 12 22	4·8	20	8·96	35·6	Apr. 30 22	3·4	20	8·97	50·5
Mar. 13 23	3·2	20	8·75	36·8	May 1 8	3·4	30	9·76	64·1
Mar. 14 22	4·4	20	9·02	38·5	May 1 22	3·7	20	9·28	56·2
Mar. 15 22	3·4	25	8·68	35·6	May 2 21	3·3	20	9·12	55·2
Mar. 17 23	3·5	15	8·56	32·3	May 3 8	4·5	25	9·81	64·4
Mar. 18 12	3·3	20	8·98	39·8	May 3 23	3·8	20	9·02	53·6
Mar. 19 2	2·9	25	9·08	43·2	May 5 22	5·6	25	8·97	54·5
Mar. 19 23	3·1	20	9·14	43·1	May 6 23	3·4	20	9·08	56·3
Mar. 21 0	2·8	15	9·00	38·6	May 7 22	3·2	20	8·75	52·5
Mar. 21 22	3·2	15	9·13	41·8	May 8 22	3·9	25	8·79	52·2
Mar. 22 22	2·8	30	9·00	42·6	May 9 22	4·0	20	9·02	54·6
Mar. 24 22	3·5	20	8·91	41·5	May 10 22	3·7	20	8·43	51·2
Mar. 25 22	2·9	20	8·90	42·6	May 12 22	3·4	25	9·03	56·2
Mar. 26 9	3·0	20	9·36	49·6	May 13 22	4·1	10	9·22	59·9
Mar. 26 22	4·3	20	9·29	48·7	May 14 22	3·7	20	8·63	54·1
Mar. 27 23	3·2	25	9·27	46·0	May 15 22	3·7	20	8·47	52·1
Mar. 28 23	3·2	20	9·18	48·6	May 16 22	4·0	20	8·57	51·9
Mar. 29 23	2·8	10	9·40	47·0	May 17 22	4·2	20	7·90	43·6
Mar. 31 23	3·5	30	9·09	46·6	May 19 22	3·7	15	8·05	46·9
Apr. 1 22	3·2	30	9 47	49·5	May 20 22	3·8	15	8·43	49·4
Apr. 2 6	3·4	30	9·27	50·9	May 21 23	3·6	20	8·28	51·2
Apr. 2 23	3·6	20	9·34	49·0	May 22 22	3·9	20	8·50	51·1
Apr. 3 6	4·4	15	9·30	50·2	May 26 22	3·8	20	8·47	50·5
Apr. 3 10	3·6	10	9·25	49·0	May 27 23	3·6	20	8·27	50·0
Apr. 4 3	4·0	20	9·01	45·7	May 28 22	3·3	15	8·10	49·8
Apr. 4 22	3·4	20	8·88	43·0	May 29 22	4·6	10	8·17	50·0
Apr. 5 22	4·8	20	8·63	39·9	May 30 23	3·6	20	8·13	50·6
Apr. 7 22	3·9	20	9·33	49·5	May 31 22	3·8	20	8·28	50·4
Apr. 8 22	4·1	20	9·35	51·9	June 2 22	3·7	20	8·26	51·9
Apr. 10 0	3·2	20	9·40	52·5	June 3 22	3·9	20	8·80	54·0
Apr. 10 22	3·7	20	9·03	48·6	June 4 22	4·3	20	8·64	56·9
Apr. 11 20	3·8	20	8·92	46·9	June 5 23	4·2	20	8·69	59·5
Apr. 12 23	3·0	20	8·83	48·3	June 6 22	3·4	20	9·04	61·8
Apr. 14 21	3·8	20	8·98	51·5	June 7 22	4·3	20	8·91	59·8
Apr. 15 22	2·6	25	8·84	47·4	June 9 22	3·7	15	8·79	59·9
Apr. 17 2	4·8	15	9·21	52·5	June 10 22	4·0	20	8·57	57·0
Apr. 17 14	3·0	10	9·35	54·3	June 11 23	4·2	20	8·68	60·2
Apr. 18 22	3·0	20	9·01	50·2	June 12 22	3·9	20	8·75	61·4
Apr. 19 22	4·5	30	9·21	54·0	June 13 22	3·7	15	8·67	59·3
Apr. 21 22	3·7	20	8·91	49·2	June 14 23	4·1	30	8·51	58·0
Apr. 22 22	3·0	20	8·99	49·4	June 16 22	4·2	10	8·32	56·5
Apr. 23 22	3·3	15	8·92	49·4	June 17 22	4·0	20	8·38	56·1
Apr. 25 1	3·1	20	8·94	52·8	June 18 22	3·3	15	8·06	54·3
Apr. 25 22	4·0	20	9·20	52·1	June 20 22	3·8	30	8·46	59·9
Apr. 26 22	3·4	15	8·75	48·6	June 21 22	3·7	20	8·62	60·5
Apr. 28 22	3·4	20	8·75	49·2	June 23 22	4·3	20	9·16	66·8
Apr. 29 6	3·2	20	9·55	61·5	June 24 22	3·9	20	8·68	59·5

April 30^{d} 7^{h}. After the vibration the box of the magnetometer was removed for the purpose of removing an insect, but the insect could not be seen. The needle having been much vibrated from exposure to the air, the observation of vibration at 7½^{h} was made.

May 3^{d} 8^{h}. The needle vibrated before this observation by the accidental approach of a mass of iron introduced by visitors.

TABLE 5.—*continued.*

Göttingen Mean Time.	Arc of Vib.	No. of Vib.	Time of Vib.	Temp.	Göttingen Mean Time.	Arc of Vib.	No. of Vib.	Time of Vib.	Temp.
d. h.	′		s.	°	d. h.	′		s.	°
June 25 22	3·3	20	7·91	53·0	Sept. 2 22	4·0	10	8·62	62·1
June 26 22	3·8	20	7·88	52·9	Sept. 3 22	4·6	20	8·45	61·0
June 27 22	3·5	15	8·08	55·8	Sept. 4 22	3·8	10	8·43	62·2
June 28 23	4·8	10	8·49	58·2	Sept. 5 23	4·1	20	8·44	61·9
June 30 22	4·0	20	8·24	56·7	Sept. 6 23	4·4	20	8·51	62·0
July 1 22	3·9	20	8·21	58·6	Sept. 8 22	3·3	20	7·74	56·6
July 2 23	3·8	20	8·30	58·9	Sept. 10 22	3·4	10	7·69	54·0
July 3 22	3·6	20	8·18	56·3	Sept. 11 22	3·1	10	7·78	56·1
July 4 22	4·3	20	7·99	55·2	Sept. 12 23	4·0	20	7·83	54·0
July 5 22	5·2	10	8·05	55·8	Sept. 13 22	3·0	10	7·74	55·2
July 7 22	4·3	10	8·22	57·5	Sept. 16 22	3·6	15	8·02	57·1
July 8 23	4·4	20	8·51	60·3	Sept. 17 22	4·8	20	7·58	52·2
July 9 22	5·1	20	8·38	58·8	Sept. 19 22	3·3	15	7·61	52·4
July 10 22	4·3	20	8·27	59·6	Sept. 20 23	4·0	10	7·40	48·2
July 11 23	4·2	20	8·34	58·9	Sept. 22 22	3·7	15	7·32	46·5
July 12 22	4·6	20	8·11	56·0	Sept. 24 23	3·8	20	7·34	49·0
July 14 23	4·1	20	7·86	55·3	Sept. 27 0	4·0	10	8·21	58·0
July 15 22	4·1	20	8·01	56·1	Oct. 1 22	4·2	15	8·01	54·5
July 16 22	4·5	10	8·30	58·1	Oct. 2 23	4·0	20	7·95	55·6
July 17 22	4·5	20	8·28	58·9	Oct. 3 22	3·9	15	7·68	52·4
July 18 22	3·9	15	8·22	57·5	Oct. 6 22	3·4	15	7·10	45·4
July 19 22	5·6	10	8·11	57·8	Oct. 9 22	4·0	10	7·39	51·6
July 22 0	3·8	20	8·22	62·2	Oct. 11 22	4·1	20	7·49	49·7
July 23 22	3·6	20	9·10	68·0	Oct. 13 22	5·0	10	7·86	54·0
July 25 0	4·1	20	9·80	67·2	Oct. 14 23	3·6	20	7·43	50·8
July 26 0	4·0	10	9·69	64·5	Oct. 15 22	3·8	15	7·48	50·7
July 27 0	5·4	25	10·04	66·1	Oct. 17 23	4·1	20	7·13	48·2
July 29 22	3·9	25	9·44	58·5	Oct. 18 22	4·0	15	6·87	42·5
July 30 22	3·5	10	9·17	57·2	Oct. 21 22	4·1	15	7·14	43·6
Aug. 1 2	3·8	20	9·18	58·9	Oct. 24 22	3·3	15	6·90	44·1
Aug. 1 22	3·2	10	9·25	57·9	Oct. 27 22	4·0	15	7·01	42·5
Aug. 2 22	3·6	10	9·25	56·7	Oct. 29 23	3·7	15	6·97	46·7
Aug. 5 23	3·3	10	9·20	59·5	Oct. 30 22	3·8	10	6·97	47·9
Aug. 7 0	4·0	20	8·97	58·0	Nov. 3 22	4·2	15	6·72	43·9
Aug. 7 22	3·5	20	8·67	57·0	Nov. 7 23	3·3	15	7·30	42·5
Aug. 8 23	5·0	10	8·58	57·2	Nov. 9 1	4·0	20	8·24	46·8
Aug. 10 1	3·4	10	8·49	56·6	Nov. 10 23	4·0	10	8·03	43·7
Aug. 11 22	2·8	20	8·55	59·0	Nov. 12 23	2·7	15	7·61	42·6
Aug. 13 22	3·4	20	8·51	58·7	Nov. 17 22	4·7	15	8·54	50·2
Aug. 14 22	4·7	10	8·62	59·0	Nov. 19 22	4·6	20	8·35	50·9
Aug. 15 23	3·5	20	8·37	58·0	Nov. 24 22	4·9	20	7·23	35·1
Aug. 16 22	3·7	20	8·53	58·2	Nov. 28 22	4·5	15	7·89	46·0
Aug. 19 0	3·4	20	8·29	56·6	Dec. 1 22	3·4	7	7·38	40·0
Aug. 19 22	3·5	20	8·18	58·9	Dec. 3 23	4·7	15	7·41	36·7
Aug. 22 2	3·8	20	8·13	56·6	Dec. 4 23	3·4	15	7·21	33·1
Aug. 22 23	3·9	20	8·03	55·9	Dec. 9 23	5·9	15	6·80	32·4
Aug. 25 23	3·4	20	8·03	56·5	Dec. 10 22	3·9	15	6·60	33·6
Aug. 27 22	4·0	20	8·16	55·5	Dec. 13 22	3·7	15	6·81	33·6
Aug. 28 23	4·6	20	8·36	57·1	Dec. 17 22	4·6	15	7·37	38·6
Sept. 1 22	4·0	20	8·60	61·4	Dec. 20 22	4·0	15	6·91	30·5

July 24^{d} 18^{h}. The box of the magnetometer lifted, and an insect removed.
July 26^{d} 3^{h}. Needle much vibrated from iron introduced by visitors.
Nov. 8^{d}. The needle much vibrated from a workman having brought a hammer too near the instrument.
Dec. 3^{d} 23^{h} and 9^{d} 23^{h}. The vibration of the needle ceases very soon.

48. 1*st*, The first conclusion that may be obtained from this Table is, that after the needle has been vibrated by any means through a large arc, its time of vibration has been increased; this will be apparent from the observations of vibration before and after April $30^d\ 7^h$, July $24^d\ 18^h$, July $26^d\ 3^h$, November 5^d, and November $8^d\ 21^h$. On all these occasions the needle was vibrated through large arcs, either from the accidental approach of iron, or from the removal of the box for a short period.*

49. 2*d*, It is at once obvious, that the time of vibration depends upon the temperature of the needle, a change of $+1°$ of temperature causing a change of from $+0^s{\cdot}05$ to $0^s{\cdot}10$ in the time of one vibration. The amount of change in the time of vibration, for 1° of temperature can only be determined from the changes within short periods, since,

50. 3*d*, The time of vibration diminishes with time. The balance needle was adjusted, Jan. 27, 1844, the times of vibration after the adjustment were

Feb. 1^d— 6^d	Mean time of one vibration, $9^s{\cdot}24$	Temperature of needle, $33^\circ{\cdot}9$
Feb. 19^d—27^d	$8^s{\cdot}65$	$32^\circ{\cdot}0$
Dec. 9^d—20^d	$6^s{\cdot}90$	$33^\circ{\cdot}7$

The temperature of the needle is nearly the same in these cases; it appears, therefore, that the time of vibration has diminished fully two seconds in ten months. This diminution is altogether independent of any variation in the magnetic moment of the needle, since the time of vibration in a horizontal plane remains nearly constant. During the same period, the mean position of the needle had varied about 160 micrometer divisions. Since the position of the needle also varies with temperature, it does not at first appear improbable that the variation in the time of vibration is due to the varying position alone. Increasing temperature at the same time raises the north end of the needle and increases the time of vibration; from the beginning of 1844 till 1846, however, the north end of the needle has been rising, while the time of vibration has been diminishing. It is certain, from other observations, that the time of vibration is nearly constant for any angle which the magnetic axis of the balance needle makes with the horizontal. During a considerable magnetic disturbance, April 17^d, 1844, observations of vibration were obtained for positions of the balance needle varying 400 micrometer divisions, yet the observed time of vibration only varied four-tenths of a second, and that not directly with the inclination of the needle, but from errors of observation and variation of temperature. Such a variation of position, if due to temperature alone, would have required a change of 50° Fahr., which would have produced a change of about $3^s{\cdot}8$, in the time of vibration.†

* See Transactions of the Royal Society, Edinburgh, vol. xvi., p. 69, Table I.

† Ibid., p. 72, Table IV.

51. In order to determine more distinctly whether change of inclination of the magnetic axis affected the time of vibration to any considerable extent, the following observations were made during an adjustment of the instrument.

January 18, 1848. The balance needle with its magnetic axis *in* the magnetic meridian, nearly horizontal, mean position + 160 mic. div.

Arc of vibration at commencement, 32′. Time of one vibration, $8^{s}\cdot05$.

After this observation, turned *out* the horizontal screw one revolution, which changed the reading from + 160 mic. div. to − 818 mic. div.

Arc of vibration at commencement, 32′. Time of one vibration, $8^{s}\cdot12$.

The horizontal screw was now turned *in* two revolutions, or one revolution farther in than at first, when the reading was changed from − 818 mic. div. to + 1120 mic. div.

Arc of vibration at commencement, 21′. Time of one vibration, $8^{s}\cdot00$.

Finally, the horizontal screw was turned *out* one revolution, as at first, the mean reading becoming as at first + 160 mic. div., when

Arc of vibration at commencement, 32′. Time of one vibration, $8^{s}\cdot12$.

52. These results are very consistent, and speak much in favour of the excellence of the knife edges of the axle. It is quite certain, therefore, that the variations in the time of vibration observed in 1844, were not due to the varying position of the needle, since all the observations in Table 5, were obtained from the needle when in positions varying less than 400 micrometer divisions.

53. As it was believed, that during considerable disturbances when the horizontal component of the earth's magnetism increased considerably, the north end of the needle might be drawn slightly out of its position at right angles to the magnetic meridian, the following observations were made to determine whether such a result would affect the time of vibration.

January 14^d 1848. The balance needle being placed on its agate planes with its magnetic axis at right angles to the magnetic meridian, the following observation was made; position of needle, micrometer reading + 180.

Arc of vibration at commencement 8′·4. Time of one vibration $11^{s}\cdot27$.

Needle vibrated excessively by a pair of magnetic scissors.

Arc of vibration at commencement 4′·8. Time of one vibration $11^{s}\cdot28$.

Brought a 4-inch deflecting magnet close to the *side* of the balance box near the west extremity, in order to draw the needle out of the plane at right angles to

the magnetic meridian; after considerable vibration, always checked by changing the position of the deflector, the following observation was made:

Arc of vibration at commencement 3′·0. Time of one vibration $11^{s}·28$.

Performed the same operation with the deflector, and again observed,

Arc of vibration at commencement 8′·0. Time of one vibration $11^{s}·12$.

Now lifted the needle by the Y*s*, lowered it, and observed the time of vibration with a large arc.

Arc of vibration at commencement 100′·0. Time of one vibration $11^{s}·27$.

Again vibrated the needle by means of the deflector placed at the side of the needle near its east extremity, so as to displace the needle from the plane at right angles to the magnetic meridian, and observed time of vibration,

Arc of vibration at commencement 90′·0. Time of one vibration $11^{s}·29$.

None of these operations seemed to alter the time of vibration to any distinct amount; the box was accordingly lifted off, and the needle was placed about 3° out of the plane at right angles to the magnetic meridian, the north pole (*i.e.* west extremity) being moved towards the north, the following observation was then made:

Arc of vibration at commencement 9′·0. Time of one vibration $10^{s}·58$.

Although the time of vibration in this position differs somewhat from that in the normal position, the previous observations prove that any deviations due to natural changes of force, would be insufficient to cause the differences evident in Table 5.

54. 4*th*, It was found in 1844 and 1845, that the time of vibration depended greatly upon the arc of vibration, the time being greatest for large arcs. (See Trans. Roy. Soc. Ed., vol. xvi., p. 70, Table II.)

55. It is difficult, if not impossible, to offer any explanation of the anomalies in the time of vibration noted above, the knife-edged axle is a fruitful resource in instruments of this class, for the explanation of all difficulties. In this case, the needle is by the best maker (ROBINSON); when examined by a lens, the knife edge appears perfect, and finally, the anomalies disappear at certain times without any apparent difference in the state of the instrument; thus, in the observations already given, Jan. 14, 1848, the time of vibration for an arc of 3′ is exactly the same as for an arc of 100′; the observations also for the time of vibration with the needle differently inclined to the horizontal (Jan. 18, 1848), speak distinctly in favour of the excellence of the knife edges. It should also be remarked, that previously to the adjustment, Jan. 27, 1844, the curious effect of temperature upon the time of

vibration was scarcely exhibited; and it may be added, that in eight months since the needle has been adjusted with its axis *in* the magnetic meridian, the time of vibration appears to remain nearly constant and equally independent of temperature and arc of vibration.

56. It appears certain from these results, obtained from an instrument of the best character, treated with the greatest care, that the time of vibration in a vertical plane cannot be depended on as an element in the reduction of the observations of the balance magnetometer.

57. The question still remains, to what extent these anomalies in the time of vibration affect the observations for the varying vertical component of the magnetic force? The following fact appears to render it certain that they have no effect whatever. In determining, by the method of comparisons (see pages l. and li.), the effect of a change of 1° Fahr. upon the position of the needle, it has been found that this effect is nearly constant, while the time of vibration in the vertical plane has varied from upwards of 11 seconds in 1843, to less than 6 seconds in 1846 (No. 77, 3d); the differences of the results for the temperature coefficient being in all probability due to considerable changes of vertical force in the periods selected for the determinations, and certainly having no relation whatever to the varying time of vibration. Since the temperature coefficient in micrometer divisions (q') has remained constant, it follows that the coefficient of reduction (k) must also be constant. This conclusion renders it the more desirable that the value of the angular motion of the needle in parts of the vertical component should be determined by another method which does not involve the time of vibration; the statical method already described for the bifilar magnetometer, has been employed for this purpose with some modification.

58. January 6, 1848. Wooden beams having been placed horizontally at right angles to the magnetic meridian, and a line having been drawn upon them, which was a projection of the prolongations of the balance needle, a small deflecting bar (3·65 inch long, and having a temperature coefficient = 0·000285), was placed vertically at different distances on the beam, and the angles of deflection of the needle were observed; the centre of the deflecting bar was in the prolongation of the axis of the balance needle when horizontal, and the distances were measured from the knife edges of the axle, which, however, was found not to be the centre of magnetism of the needle. The resulting deflections and values of k for each distance will be found Table 6.

January 10, 1848, the balance needle was taken out of its box, and attached to the brass detorsion bar of the declinometer; the brass bar was mounted with a glass scale and lens, and was suspended in the declinometer box; the balance needle was then deflected by the bar used for the previous deflections, which was placed to the north and south of the suspended needle, so that in both series of deflections the prolongation of the balance needle in its normal position passed through the centre of the deflecting bar. The deflections for three distances are given, Table 7.

TABLE 6.—Observations of Deflection of the Balance Magnet resting upon the Agate Planes, January 6, 1848.

Distance of Bar.	Order of Observation.	Bar E. N. end up. Balance.	Order of Observation.	Bar W. N. end up. Balance.	Order of Observation.	Bar E. N. end down. Balance.	Order of Observation.	Bar W. N. end down. Balance.	Deflection at 37°.	Deflection at 32°.	Log. tan. u.	Value of k.
Feet.		Mic. Div.		Mic. Div.		Mic. Div.		Mic. Div.	Mic. Div.	Mic. Div.		
Away	1	+ 36·7	14	+ 69·5			27	− 49·0				
2·6	2	+ 267·0	13	+ 383·5	15	− 201·5	26	− 382·2	308·5	309·0	7·94533	0·0000099
2·4	3	+ 333·5	12	+ 471·5	16	− 282·0	25	− 479·7	391·7	392·3	8·06003	·0000099
2·2	4	+ 444·1	11	+ 632·0	17	− 401·2	24	− 625·5	525·7	506·5	8·18828	·0000099
2·0	5	+ 612·2	10	+ 875·5	18	− 583·5	23	− 850·5	730·4	731·5	8·33067	·0000099
1·8	6	+ 907·5	9	+1238·2	19	− 890·0	22	−1227·0	1065·7	1067·4	8·49577	·0000099
1·7	7	+1184·5	8	+1500·5	20	−1125·0	21	−1505·5	1328·9	1331·0	8·58925	·0000096
Away	6	− 66·5	11	+ 28·5	1	− 44·5						
2·6	7	+ 190·2	10	+ 338·0	2	− 280·7	5	− 349·5	289·6	290·1	7·94533	0·0000101
1·8	8	+ 899·0	9	+1172·0	3	− 912·5	4	−1188·0	1045·4	1047·5	8·49577	·0000103

TABLE 7.—Observations of Deflection of the Balance Magnet suspended horizontally by the Declinometer Thread, January 10, 1848.

Distance of Deflecting Bar.		Observed Deflection.	Mean Observed Deflection.	Value of 1 + Φ.	Deflection Corrected for Torsion.	Value of One Sc. Div.	Resulting Deflection.	Temp. of Deflecting Bar.
Feet.		Sc. Div.	Sc. Div.		Sc. Div.	′	′ ″	°
3·0	S.	26·96	25·37	1·00851	25·59	0·746	19 5	32·0
	N.	23·78						
2·4	S.	56·83	52·46		52·91		39 28	
	N.	48·09						
1·9	S.	129·88	117·43		118·43		88 21	
	N.	104·98						

From the deflections, Table 7, and the formula

$$\frac{M}{X} = r^3 \tan u \left(1 + \frac{p_1}{r^2} + \frac{q_1}{r^4}\right),$$

we find

$$\log \frac{M}{X} = 9{\cdot}13614 \qquad -\log p_1 = 9{\cdot}88791 \qquad -\log q_1 = 9{\cdot}11654$$

From the previous equation,

$$\tan u = \frac{M}{X} \frac{1}{r^3\left(1 + \frac{p_1}{r^2} + \frac{q_1}{r^4}\right)};$$

the values of $\frac{M}{X}$, p_1, and q_1, given above, and the values of r from the first column of Table 6, being substituted in this equation, the values of log tan u, column 12, have been obtained.

If Y, the vertical component, be substituted for X, in equation (2.), No. 34, we shall have, since $Y = X \tan \theta$

$$\frac{\Delta Y}{Y} = \frac{M}{r^3 X \tan \theta}(1 + \frac{p_1}{r^2} + \frac{q_1}{r^4}),$$

whence

$$k = \frac{\tan u}{n \tan \theta}$$

where k is the value of $\frac{\Delta Y}{Y}$ for one micrometer division, u and n are the corrected horizontal and vertical deflections for the same distance r; the former in angular measure, its logarithmic tangent being given, column 12, Table 6; and the latter in micrometer divisions, reduced to the temperature of the deflecting bar during horizontal deflections; θ is the magnetic dip, the adopted value being 71° 20′. The temperature coefficient of the deflecting bar = 0·000285.

The mean of all the values of k, 13th column, Table 6 = 0·00000994.

59. In the foot-notes to the observations, pages 1 to 157, the value of k is given =0·0000085, that having been the value deduced from the vertical deflections of the balance needle compared with the horizontal deflections of a short unifilar magnet July 1 and 2, 1846: when these vertical deflections are compared, by the previous method, with the horizontal deflections of the same needle, given Table 7, allowance being made for the loss of magnetism of the deflecting bar between July 1846 and January 1848, k is found =0·00001025.

The adopted value of k for the balance magnet=0·0000100

This value of one micrometer division in parts of the whole vertical component may be considered applicable to all the observations of the balance magnet since 1841: it has been used in the abstracts of results for the present volume.

60. Adjustment of the balance needle.

The balance needle was removed January 27^d 0^h 1844, for the purpose of determining its temperature coefficient by hot and cold water experiments: the details of these observations have been already given, Introduction, 1841–2, p. xliii.: the needle was readjusted January 27^d 8^h.

61. The observations before January 27^d were connected with those after that date in the following manner:—

		Mic. Div.	
Mean balance reading corrected for temperature, Jan. 15^d—20^d,	. =	821·0	
.... Jan. 22^d—26^d,	. =	811·9	
Mean change of reading for 7 days, ...	=−	9·8	Mic. Div.
Mean reading, therefore, corresponding to January 28^d before adjustment, .			=806·3
Mean balance reading corrected for temperature, Jan. 29^d—Feb. 3^d,	=	766·5	
.... Feb. 5^d—Feb. 10^d,	=	759·3	
Mean change of reading for 7 days, ...	=−	7·2	Mic. Div.
Mean reading, therefore, corresponding to January 28^d after adjustment, . .			=770·1
The readings after adjustment are therefore less than before adjustment, by .			36·2

The difference of mean readings for the two days before and after adjustment, and the difference for the day before and after adjustment, are each nearly =39·0 mic. div., whence 37·0 has been adopted as the true difference. All the observations of the balance made between Dec. 31, 1843 and January 27, 1844 have been corrected by − 37·0 mic. div.

62. The observations of the balance magnetometer are made in the following manner :—The moveable wire of the right micrometer is made to bisect the spider-cross half the time of vibration in the vertical plane before the minute of observation, and that of the left micrometer as long after the minute ; the mean of the two readings gives the position of the needle at the minute. The readings increase positively when the north pole of the needle moves below the horizontal. The quantities given, pages 1 to 157, are obtained thus : n being the observed reading of the needle (generally negative), t that of the thermometer, giving the temperature of the needle, q' the temperature coefficient in micrometer divisions =7·90, and R the quantity in the column, " Balance Corrected"

$$R = 700 + q' (t - 26) + n ;$$

increasing tabular values, therefore, indicate increasing vertical force.

THE TEMPERATURE COEFFICIENTS OF THE DEFLECTING, BALANCE, AND BIFILAR MAGNETS.

Deflecting Magnet.

63. The temperature coefficient of the large deflecting bar (15 inches long), used in the observations for the absolute horizontal intensity, was determined November 11, 1843, by hot and cold water experiments, see pages xlii. and xliii., Introduction 1843, for the details : the mean of all the observations gave

The correction for 1° of Fahr., $q = 0·000288$

64. The observations from which this result was obtained were very good, considering that the whole angle of deflection was less than 3′, and it may therefore be worth examining the individual results for the highest and lowest temperature. The whole number of results was 15, the mean difference, from the final result given above, =0·000025, and the probable error of a *single* result was therefore about 0·000021.

The mean of 9 results for the mean temperature 49°·7 gave q = 0·000289
The mean of 6 .... 68°·7 ...... q = 0·000286

so that the temperature coefficient for this bar is constant within the *ordinary* temperatures occurring during the observations in which it was employed.

Bifilar Magnet.

65. The temperature coefficient for this magnet was also determined by means of hot and cold water experiments, Nov. 9 and 10, 1843. See page xli., Introduction, 1841–2, for the details. The whole number of results was 30: the mean gave

The correction for 1° Fahr., Q = 0·000294.

66. If the 27th and 28th results (counting from the top of the last column of Table 19, p. xli., Introduction, 1841–2) be rejected, as it is believed that the great difference of both from the mean was probably due to one error in reading, we find the average difference of the 28 results from the mean = 0·000021, and the probable error of a single result was therefore about 0·000017. Combining the results from high temperatures together, and similarly for those from low temperatures, we find

The mean of 15 results for the mean temperature 48°·0 gave Q = 0·000292
The mean of 13 .... 68°·7 ...... Q = 0·000295

so that for the bifilar magnet, also, the temperature coefficient is constant within the ordinary temperatures of 32° to 80° Fahr.

67. The correction for the expansion of the silver wires and brass grooved wheel, =0·000010, being added to the value of Q above, we have

The temperature correction for 1° Fahr., *from hot and cold water experiments*, q = 0·000304.

68. As the observations in connection with the balance needle had shewn that there might exist variations due to temperature, other than those due to the variation of the magnetic moment of the magnet, such as the varying elasticity of the suspending wire of the bifilar magnet, the temperature coefficient was determined in the following manner, which had at first been found to give consistent results for the balance needle.

69. A series of days being selected in which the magnetic irregularities are small, and in which the variations of temperature are as considerable as possible, if we compare the mean instrumental readings for any two days, and if ΔR be the difference in scale divisions, this difference is due to change of temperature of the magnet, and to change of the horizontal component of the earth's magnetism, let the portion of change of reading due to the former $= A$, and to the latter $= \Delta X$, so that

$$\Delta R = A + \Delta X.$$

If the difference of the mean temperatures of the magnet for the same two days be Δt, then the correction for 1° of temperature in scale divisions

$$q' = \frac{A}{\Delta t}$$

whence

$$q' = \frac{\Delta R}{\Delta t} - \frac{\Delta X}{\Delta t}$$

Let a series of such values be obtained by comparing the mean scale reading, and mean temperature of the magnet for each day with those for each day following in the period selected: if we consider the differences Δt positive, when the succeeding day's mean temperature is less than that for the preceding day, and sum the whole number of differences for which Δt is positive,* then

$$q' = \frac{\Sigma \Delta R}{\Sigma \Delta t} - \frac{\Sigma \Delta X}{\Sigma \Delta t}$$

If we neglect the last member, the whole error of the determination of q' will depend on the sum of variations of the mean horizontal force $\Sigma \Delta X$; as in a sufficient number of determinations, it is probable that these variations will be as much positive as negative, and, therefore that the numerator will nearly vanish, the last member may be neglected in the determination of q', and this with the more accuracy the larger the sum of the differences of temperature $\Sigma \Delta t$. Again, if the differences for which Δt is negative are summed, we shall have

$$q' = \frac{\Sigma \Delta R}{\Sigma \Delta t} + \frac{\Sigma \Delta X}{\Sigma \Delta t}.$$

The sign of the first member on the right remains as before, since ΔR also changes sign. Reasoning as in the previous case, $\Sigma \Delta X$ may be supposed nearly zero, and the last member of the equation negligible. If, however, the supposition that the sign of ΔX varies positively and negatively with reference to the sign of Δt be inaccurate, it must be supposed either that the horizontal component remains

* If the scale readings increase with increasing horizontal force, ΔR will generally be negative when Δt is positive, and *vice versa*. The sign of Δt is used as the argument, so that if ΔR be positive when Δt is positive, that value of ΔR will be subtracted from the sum of differences $\Sigma \Delta R$.

constant, and therefore, that Δ X = 0, or that it varies in one direction only, increasing continuously, or diminishing continuously, throughout the period selected, and, therefore, that the sign of Δ X is the same for both equations. In the latter case, it is evident that by taking the mean of the values of q' from the two equations, the last members will nearly destroy each other. It has been supposed that the variations of X are altogether independent of the variations of the temperature, a supposition which is borne out by every method of examination of the results. The details of a series of comparisons are given, pages li., lii., and liii., Introduction, 1843, from these it appears:

70. 1*st*, That the value of q' is the same, when a sufficient number of comparisons have been obtained, whether it has been obtained from comparisons of daily means, at 1, or 2, or 3, ... or 14 days' interval.

71. 2*d*, That the value of q' is the same, whether the differences of temperature have been due to natural or artificial causes, and when the differences of temperature of the magnet have had an opposite sign from those for the temperature of the external air.

72. From the second result, it follows, that the variations of the horizontal component of the earth's magnetism are wholly independent of the temperature of the air, and from both results it appears probable that they are independent of the temperature of the soil.*

73. The following Table contains the sums of differences of the daily mean temperature of the bifilar magnet, and the value of q' which has resulted from each series of comparisons. The series of comparisons for 1845 have been made since the publication of the series for 1844, for the purpose of verifying the constancy of the result.

TABLE 8.—Determinations of the Temperature Coefficient of the Bifilar Magnet.

Period.	Sum of Diff. Temp.	Value of q'.	Period.	Sum of Diff. Temp.	Value of q'.
1844.	°	Sc. Div.	1845.	°	Sc. Div.
May 9—May 24	320·6	2·22	Jan. 13—Feb. 12	1809·0	1·81
May 29—June 28	1610·7	1·83	Feb. 26—Mar. 28	1608·1	2·06
July 17—July 30	270·0	1·77	June 2—July 2	1725·0	2·13
Sept. 2—Sept. 25	1164·4	1·96	Dec. 8—Dec. 31	757·7	1·65
Nov. 26—Dec. 13	833·3	1·99			

The series of observations for 1844, giving each result an equal weight, give $q' = 1·95$ sc. div.
.... 1845, ... $q' = 1·91$ ...
.... 1844, giving the results the weights $\Sigma \Delta t$, give $q' = 1·92$ ...
.... 1845, ... $q' = 1·95$ ...

* See foot-note, p. 395 of the present volume.

Whether the results for each year have equal weights, or have weights depending on the sums of differences of the daily mean temperatures ($\Sigma \triangle t$), we find

$$q' = 1{\cdot}93 \text{ sc. div.}$$

The adopted value of the temperature coefficient of the bifilar magnet, $q' = 1{\cdot}90$ sc. div.

The value of one scale division in parts of force for the period of comparisons (1844 and 1845), being $k = 0{\cdot}000140$.

Whence, the correction for 1° Fahr., from comparisons of observations, is $q = 0{\cdot}000266$.

74. The result from hot and cold water experiments is nearly $\frac{1}{7}$ more. It appears, therefore, that the determination of the temperature coefficient, by removing the magnet from its position in the instrument and varying its temperature by means of hot and cold water, cannot be depended on. It appears also, that when a sufficient number of observations is included, the method of comparison previously described gives, under very different conditions, consistent, and, therefore, it is probable, accurate results.*

Balance Magnet.

75. The temperature coefficient of the balance magnet was determined by means of hot and cold water experiments August 24, September 1 and 2, and November 13, 1843, and January 27, 1844. See pages xlii., xliii., and xliv., Introduction, 1841–2, for the details. The mean of the whole observations, properly weighted, gave

$$q = 0{\cdot}000073.$$

76. The only good series was that obtained January 27, 1844, which included changes of temperature from 35° to 65° only; the other series are too inaccurate to be employed for the determination of the value of q for high and low temperatures; from series of comparisons of the usual observations of the balance it has been found, however, that the value of q', the temperature correction for 1° Fahr. in micrometer divisions, is the same for high and low temperatures, thus—

	Mic. Div.
From 7 series of comparisons in 1844 and 1845, about the mean temperature 40°,	$q'=8{\cdot}33$
From 8 .... 60°,	$q'=8{\cdot}30$

As the first result is the mean of 7 values of q', obtained from comparisons of the mean readings of the balance magnetometer for about 170 days, in the months of January, February, November, and December 1844 and 1845; and as the second

* It should be remarked, that these conclusions do not depend wholly upon the results for the Makerstoun instruments, their accuracy has been verified by an examination of the observations made in other places.

result is the mean of 8 values of q', obtained from comparisons of the mean readings of the balance magnetometer upon about 190 days in the months of May, June, July, August, and September 1844 and 1845; it is extremely probable that the temperature coefficient for the balance magnetometer is constant for the ordinary temperatures of observation.

77. As it was found impossible to determine k the value of one micrometer division in parts of the whole vertical component, by means of the vertical vibrations, the value of q obtained from hot and cold water experiments could not be employed, since the observations could not be reduced to parts of vertical force, nor could the value of q be reduced to micrometer divisions. In consequence of this difficulty, the method already described for the bifilar magnetometer was first employed for the determination of q' the temperature coefficient in micrometer divisions: the details of several of these comparisons will be found, pages xlv., xlvi., xlvii., xlviii., and xlix., Introduction, 1843. It was found from these comparisons,

1*st*, That the value of q', when a sufficient number of comparisons had been obtained, was independent of the interval between the days compared.

2*d*, That the value of q' remained the same after various adjustments of the needle; the vertical screw for adjusting the sensibility never having been touched.

3*d*, That the value of q' has remained constant while the time of vibration in a vertical plane has varied from upwards of 11^s to less than 6^s; from which result it has been concluded that the value of k also has been constant.

4*th*, That the value of q' is the same, whether the differences of temperature of the magnet have been due to natural or artificial causes, and whether the differences of temperature of the magnet have had the same sign or an opposite sign from those of the temperature of the air.

78. From the 1st and 4th conclusions, it follows that the variations of the vertical component of the earth's magnetism are independent of the temperature of the air and of the temperature of the soil.*

79. The mean of all the results in the volume for 1843, Introduction, pages xlvii. and xlviii., gave

$$q' = 7{\cdot}90 \text{ micrometer divisions};$$

and adopting the value of k, obtained from deflections, No. 59,

$$q = 0{\cdot}000079.$$

Which result is only $\frac{1}{12}$ more than that obtained from the hot and cold water experiments: it appears in the case of the Makerstoun instrument that the errors of the usual methods are found chiefly in the determination of k; this, however, is not always the case.

The observations for 1843, 1844, 1845, and 1846, in micrometer divisions, have been corrected by the value

* See foot-note, p. 395 of the present volume.

$q' = 7{\cdot}90$ micrometer divisions.

80. Since this value was obtained, several other determinations have been made, by comparisons of observations in 1844, 1845, and 1846; all the results obtained are given in the Table below; several of the results obtained more lately have been deduced from periods ill fitted to give a good value; the whole, however, have been given in order to shew the amount of error that may be expected in using bad series. In one or two of these cases the amount of disturbance has not been very considerable, but the greatest variations of the daily mean vertical force have *happened* to occur at the same time with the greatest variations of mean temperature; it is believed that it is to this cause chiefly that the differences of the results are to be attributed.

TABLE 9.—Determinations of the Temperature Coefficient of the Balance Magnet.

Period.	Sum of Diff. Temp.	Value of q'.	Period.	Sum of Diff. Temp.	Value of q'.
	°	Mic. Div.		°	Mic. Div.
1843.			1844.		
Jan. 16—Jan. 21	58·4	8·21	Nov. 4—Nov. 30	1066·2	6·92
Jan. 23—Jan. 28	90·9	6·99	Dec. 2—Dec. 28	939·0	7·20
Jan. 30—Feb. 4	64·0	7·21	1845.		
Feb. 6—Feb. 11	67·8	6·69	Jan. 6—Feb. 8	2086·3	7·57
June 1—June 30	1885·8	7·82	Feb. 26—Mar. 28	1830·1	8·00
Sept. 6—Sept. 16	120·4	8·04	Apr. 10—May 10	1279·1	9·08
1844.			June 2—June 30	1551·6	8·47
Jan. 1—Jan. 26	971·4	9·27	July 7—Aug. 6	1069·8	10·01
Feb. 5—Mar. 6	1392·5	9·30	Sept. 9—Oct. 13	1580·6	7·81
May 9—May 24	350·6	7·93	Dec. 11—Jan. 10	1585·2	10·17
May 29—June 29	1693·1	7·43	1846.		
July 4—Aug. 3	1360·9	7·74	Nov. 30—Dec. 26	1190·2	7·72
Aug. 4—Sept. 6	904·0	7·90			

Giving the differences for all the series equal values, and dividing the sums of differences of the daily means in micrometer divisions by the sums of differences of the daily mean temperatures of the needle, we have

$$q' = 8{\cdot}23 \text{ mic. div.};$$

but if the results from the bad series for July 7—August 6, 1845, and December 10, 1845—January 10, 1846, be rejected, the value would be

$$q' = 7{\cdot}99 \text{ mic. div.}$$

If the *whole* series were properly weighted, it is believed that the resulting value of q' would be less than 8·00 mic. div. The excellent series, November 30—December 26, 1846 (after an adjustment July 1846) gives

$$q' = 7{\cdot}72 \text{ mic. div.}$$

The adopted value of the temperature coefficient for the balance magnet = 7·90 mic. div.

It is believed that this value, which has been used in correcting all the observations since the commencement of 1843, is within one-tenth of a division of the truth.

81. The following matters should be attended to in determining the temperature coefficient by the previous method.

1st, The period selected should be free from considerable magnetic irregularities.

2d, There should be a considerable change of daily mean temperature, the temperature at the beginning and end of the period being nearly the same.

3d, The smaller the duration of the period consistently with the 2d the better.

4th, It will be found best, in general, to correct the daily means at first by an approximate coefficient, and

5th, To eliminate the secular change approximately, if it be considerable.

Both the latter methods were employed in many of the determinations given in Table 9.

INCLINOMETER.

82. The dip instrument was made by the late Mr ROBINSON of London. The vertical circle is $9\frac{1}{2}$ inches in diameter; it is divided to 10′, the graduations counting from 0° on the horizontal to 90° on the vertical; 1′ is estimated with the aid of lenses attached to a glazed case; the vertical circle turns with a copper framework on a vertical axis, centred in a horizontal circle; the latter is 6 inches in diameter, is divided to 30′ and is read to 1′ by means of a vernier. A sliding framework carrying Y*s* moves within that bearing the agate planes on which the axle of the needle rests; the Y*s* serve to lift and lower the needle on the agates, but they have been found to act very irregularly, at times giving the needle a pitch in a certain direction. A level screwed to the basement plate indicates the horizontality of the agates; this was, however, also verified occasionally by means of a small level placed upon them; it was found that the level varied according as the door of the case inclosing the instrument was shut or open; it was, therefore, always tested with the door shut, as it is during observations. The reading of the horizontal circle, when the vertical circle is in the magnetic meridian, was obtained with the aid of a horizontal needle, carried on a pivot whose arms rest on the agate planes. There are two dipping needles, numbered 1 and 2, and one end of each needle is marked A, the other end is marked B; all the marks are on one face of each needle. The needle is observed in four positions with one end dipping, namely, with the marked face of the needle on the same side as, and opposite to, the graduated face of the circle, the latter being in the meridian, first to the east, and then to the west; as

each extremity of the needle is observed, there are thus eight readings obtained. The poles being changed, and the other end dipping, other eight readings are similarly obtained. The means of the two readings for each position are given in this volume. In changing the poles, the needle was placed on a small wooden block having a hole to receive the axle; it then received eight strokes on each face (as in the method of double touch) from two magnets, each 9 inches long, $\frac{3}{4}$ inch broad.

83. Observations were made on April 18 and May 2, 1843, in different azimuths, in order to determine the correction due to the irregularity of the needle's axle, or perhaps to the presence of iron in the vertical circle; these observations have been already given (Table 21 and Table 22, Introduction, 1841-2.) The correction deduced was about $-11'$ for needle No. 1. No correction has been applied to the results in this volume. In 1846, the vertical circle was removed from the instrument and placed horizontally, the dip needle was suspended by a silk fibre within the circle, the needle and circle being in the same plane, the needle was then vibrated horizontally, and the zero of the graduations was placed in different azimuths; the time of vibration was found very little affected by the varying positions of the circle; it seems probable, therefore, that the correction above mentioned is due solely to the imperfections of the axle.

The inclinometer occupied a strong wooden pillar in the intensity house unconnected with the floor.

84. From various instrumental causes, the observations of magnetic dip in 1844 appear to be of little value, the difficulties in connection with the lifter already noticed in the Introduction for 1843 were frequently experienced, much care was bestowed upon the observations, but, without some alteration in the instrument, no care seemed capable of giving consistent results. Upwards of 60 hours were expended in observing alone in 1844, and a half may be added for the necessary preparations, &c. Yet, it is conceived, that a single good observation would be as valuable as the mean of the whole.* The observations are given, pages 162-164.

The mean of all the observations of magnetic dip in 1844 = $71^{\circ}{\cdot}28'{\cdot}7$.

* Observations were made in the following manner for the determination of the magnetic dip in February 1846. The dipping needle having been placed on its supports in the inclinometer, it was deflected by a magnet placed at known distances, in order to determine the ratio of the magnetic moment of the deflecting bar to the vertical component of the earth's magnetism; the moment of the bar was obtained from observations of deflection and vibration for the absolute horizontal intensity, whence the vertical component could be determined, and the dip from the ratio of the two components. The advantage of this method over others, consists in the capability of using a powerful deflecting bar whose moment can be determined with the accuracy of the observations for the horizontal intensity.

BAROMETER.

85. The barometer is by NEWMAN. The tube is 0·552 inch in diameter; the scale is attached to a brass rod, terminating in an ivory point, which at each observation is moved by means of an endless screw till it meets its image in the mercury of the cistern; the cistern is about 3 inches in diameter; the vernier professes to read to 0·002 inch, and that 0·001 inch may be estimated, but the graduation is so inexact as to give changes in error from 0·002 to 0·003 inch, when the reading is made alternately at the two extremities of the vernier.

86. In 1841, the barometer was compared indirectly with the standard barometers of the Royal Society of London, by means of one made by NEWMAN for the DUKE of ARGYLE. The comparisons of the DUKE of ARGYLE'S barometer with the readings from the flint and crown glass tubes of the Royal Society (both tubes being connected with the same cistern) are given, Table 23, Introduction, 1841–2. They are not consistent. A consistent series of comparisons of the Makerstoun barometer with the DUKE of ARGYLE'S is given, Table 24, Introduction, 1841–2. The results of these comparisons are

	in.
DUKE of ARGYLE'S barometer *minus* Royal Society's crown and flint glass,	= + 0·009
Makerstoun barometer *minus* DUKE of ARGYLE'S, ...	= + 0·003
Makerstoun barometer *minus* Royal Society's crown and flint glass, . .	= + 0·012

87. In July 1847, a series of comparisons was made by myself of a barometer by TROUGHTON, marked B, belonging to Sir THOMAS BRISBANE, with the flint-glass barometer of the Royal Society of London. The same barometer (TROUGHTON B) was a few days afterwards compared by myself with the Makerstoun standard barometer: these comparisons are given, Tables 10 and 11.

TABLE 10.—Comparisons of the Barometer TROUGHTON "B" with the Flint-Glass Standard Barometer of the Royal Society of London, July 2, 1847.

Royal Society's *Flint-Glass* Standard.		Troughton "B."			Royal Society Standard *minus* Troughton "B."
Height.	Temperature.	Height.	Temperature.	Corrected to Temp. of Royal Society Standard.	
in.	°	in.	°	in.	in.
30·302	63·6	30·262	66·0	30·256	+0·046
·304	63·9	·267	66·4	·261	·043
·300	64·2	·266	66·8	·259	·041
·291	64·8	·254	65·8	·251	·040
·292	64·8	·255	66·2	·251	·041
·268	64·5	·232	65·7	·229	·039

TABLE 11.—Comparisons of the Makerstoun Standard Barometer with the Barometer TROUGHTON "B," July 8d—10d, 1847.

Makerstoun Standard.		Troughton "B."			Troughton "B" *minus* Makerstoun Standard.
Height.	Temperature.	Height.	Temperature.	Corrected to Temp. of Makerstoun Standard.	
in.	°	in.	°	in.	in.
29·722	68·7	29·682	73·0	29·671	−0·051
29·717	66·4	29·667	66·8	29·666	·051
29·924	71·3	29·882	74·9	29·873	·051
30·061	61·5	30·020	65·2	30·010	·051
29·987	67·0	29·946	71·3	29·935	·052

From these comparisons we find

	in.
TROUGHTON B *minus* Royal Society's flint-glass, ...	= − 0·0417
Makerstoun standard *minus* Troughton B, ...	= + 0·0512
Makerstoun standard *minus* Royal Society's flint-glass, . .	= + 0·0095

In the comparisons made in 1841, the mean of both the crown and flint glass tubes has been employed: making use of Tables 23 and 24, Introduction, 1841–2, we find

	in.
DUKE of ARGYLE'S barometer *minus* Royal Society's flint-glass, . .	= + 0·0055
Makerstoun standard barometer *minus* DUKE of ARGYLE'S, ...	= + 0·0029
Makerstoun standard barometer *minus* Royal Society's flint-glass, .	= + 0·0084

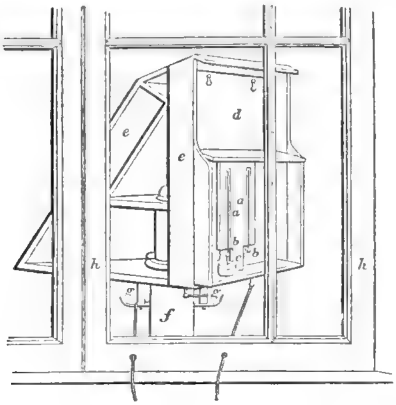
The comparisons in 1841 and 1847, therefore, differ only one-thousandth of an inch.

88. All the observations of the Makerstoun standard barometer are corrected by −0·012 inch to the mean of the Royal Society's flint and crown glass barometers; they are also corrected for temperature to 32° Fahr., by SCHUMACHER'S Tables, given in the Report of the Committee of Physics of the Royal Society of London. The cistern of the barometer is 213 feet above the mean level of the sea at Berwick-upon-Tweed.

THERMOMETERS.

89. The dry and wet bulb thermometers *a a* are by ADIE and SON. The bulbs *b b* are 0·3 inch in diameter, and tenths of a degree can be estimated with accuracy on the scales *a a*; the thermometers are attached to a wooden slab *c*, fixed to the

moveable front *d* of the wooden case, 4 feet above the soil; the bulbs project below the wooden slab *c*, and as holes are cut in the wooden case behind them, they are exposed to freely-circulating air. The wooden case, which has slightly-projecting top and sides at the front, and a double sloping back, revolves on a post *f*, and can be turned from within the Observatory by means of cords and pulleys *g g*. When an observation is made, the case is turned till the thermometers face the window *h*, being 9 inches distant from it; after reading, which is done through the glass (thus avoiding any error due to proximity of the observer, or the light at night), the case is again turned with the back towards the window, or towards the wind if it rain. It was found early in the summer of 1843,



that in spite of the precaution of turning the back of the case towards the sun before 7^{h} A.M. and after 5^{h} P.M., if the sun shined brightly, the temperature indicated by the thermometer was visibly increased. In all such cases, therefore, the moveable front *d* was lifted off the case and suspended in the shade, at an equal height from the soil, on the west or east wall of the Observatory, being kept apart from it by projecting knobs. Observations at different times shewed, that, all other things being equal, the temperature was the same in all the three positions, but when the sun shined on the case, it might be one or two degrees less to the east or west than to the north. The observations made to the east or west after July 9, 1844 are indicated in the column of differences by a cross, thus †, for the first observation after removal from the case, and by a cross, thus ⸸, for the last observation before replacing the thermometers on the case.

90. It sometimes happens, when the air is very humid, during frost, and on clear nights, especially when the temperature is falling, that the dry bulb thermometer reads less than the wet bulb;* when such is the case, the *difference* of the readings of the two thermometers has not been given, and in the summations for

* The cause of this apparent anomaly in frosty nights, it is conceived, is due to the deposition of moisture on the silk cover of the wet bulb, which is frozen as it is deposited, till it becomes a thickish coat of silk and ice; the dry bulb receives, at the same time, a thin coat of moisture, and becomes a more facile wet bulb. In clear, humid nights, without frost, nearly the same explanation will apply; the dry bulb will radiate its heat into space with more facility than the wet bulb. It might be preferable, therefore, on these occasions, to make use of the readings of the wet bulb for the temperature of the air, and of the readings of the dry bulb for the temperature of evaporation during frosty nights; where, however, the differences of the readings may be considered due chiefly to the different radiating powers of the two bulbs, the readings, perhaps, should be considered the same; this has been done in all cases in the present volume.

the abstracts of results, the reading of the wet bulb has been considered the same as that of the dry bulb.

91. The following Table contains the corrections of the dry and wet bulb thermometer readings for 1844, to the reading of a standard thermometer by NEWMAN,—the reading of the latter, in a mixture of pounded ice and water, being 32°·00. On January 7, 1843, a series of comparisons of different thermometers was made with the standard thermometer; the comparisons were made in water of different temperatures; the results were given in the Introduction for 1843, Table 23, p. lvii. On October 17, 1843, the readings of the thermometers in a mixture of pounded ice and water were obtained; they were as follow:—

NEWMAN'S standard, 32°·00. Dry bulb, 32°·8. Wet bulb, 32°·7.

Similar comparisons, September 4, 1844, gave

NEWMAN'S standard, 32°·00. Dry bulb, 32°·75. Wet bulb, 32°·65.

On January 7, 1843, the readings in water and ice were,

NEWMAN'S standard, 32°·00. Dry bulb, 32°·7. Wet bulb, 32°·6.

It appears, therefore, that in 1844, the index errors of the dry and wet bulb thermometers were about one-tenth of a degree greater than in January 1843; altering the errors, Table 23, Introduction, 1843, to this extent, we obtain the following Table:—

TABLE 12.—Corrections of the Dry and Wet Bulb Thermometers to the Temperature by NEWMAN'S Standard, in 1844.

Temperature.	Corrections.		Temperature.	Corrections.	
	Dry.	Wet.		Dry.	Wet.
°	°	°	°	°	°
32	−0·8	−0·7	60	−0·5	−0·3
36	−0·7	−0·6	63	−0·4	−0·3
40	−0·7	−0·6	67	−0·2	−0·1
45	−0·6	−0·5	70	0·0	+0·1
50	−0·5	−0·4	76	+0·1	+0·2
55	−0·5	−0·4	79	0·0	+0·2

The observations of the dry and wet bulb thermometers, given pages 172–308, are *not* corrected for the errors of the thermometers; but the corrections have been applied to the abstracts of results, pages 404—412.

92. The maximum and minimum self-registering thermometers, on RUTHERFORD'S construction, were made by ADIE and SON; they were attached to a frame fixed to the north side of the Observatory, about three feet from the ground, and near the dry and wet bulb thermometers. A self-registering mercurial thermome-

ter, with a black bulb, by R. ADIE, of Liverpool, was placed, in the end of May 1844, within the enclosed space occupied by the Observatory rain-gauge, exposed to the sun, for the purpose of obtaining the maximum amount of solar radiation; another self-registering alcohol thermometer, with black bulb by the same maker, was placed near the other in September 1844, with its bulb in the focus of a parabolic metallic reflector, for the purpose of obtaining the minimum of terrestrial radiation. The observations of the self-registering thermometers are given pages 310–312; they have all been corrected for the scale errors of the thermometers.

93. Another thermometer was employed for the determination of the temperature of the water in two pump-wells, which are within about 200 yards of each other; the pumps are nearly on the same surface-level, the depth of the cottage-well being 10 feet,—that of the garden-well 21 feet. On one occasion, it was found that there was one foot of water in the cottage-well, and two feet of water in the garden-well. In obtaining the temperature, the water was pumped till the reading of the thermometer remained constant. All the observations have been corrected for the scale error of the thermometer used.

ACTINOMETER.

94. The actinometer was made by STEVENSON of Edinburgh; it consists of a hollow cylinder of glass filled with ammonio-sulphate of copper. One extremity of the cylinder is joined to a thermometer tube, terminating in a hollow bulb; the other extremity is cemented to a metallic cap, through which a screw, working in a collar of leather, passes into the cylinder; a scale of 100 divisions is attached to the thermometer tube; the whole is inclosed in a larger glass cylinder of two inches diameter. A portion of this cylinder, opposite the liquid, is inclosed by a segment of a metallic cylinder, blackened within. In making an observation, the inner cylinder was exposed to the sun's rays at a perpendicular incidence for 60 seconds, the scale readings of the fluid in the tube being observed at the beginning and end of the minute. A screen was then interposed for one minute, or for one minute and a half; if for one minute only, the last observation in the sun was also noted as the first in the shade; if for one minute and a half, the first reading in the shade was not made till the instrument was shaded half a minute. At the end of 60 seconds the scale reading was again observed, and the screen was removed, that reading being also noted as the first in the sun. When the liquid mounted near the top of the thermometer tube, the screw was withdrawn nearly half a revolution, when the liquid fell to near the bottom of the tube. The times were noted from a box-chronometer by DENT, No. 1665. In February 1844, the liquid in the cylinder was frozen while the instrument was in the Observatory, and the cylinder was broken. The following were the dimensions of this actinometer:—liquid cylinder, $5\frac{1}{2}$ inches long; mean external diameter, 1·013 inch; mean internal diameter,

0·924 inch; thermometer tube, $6\frac{1}{2}$ inches long; the mercury, filling 2·9 inches of the tube, weighed 11·5 grains, and 100 divisions of the scale are equal to 5·51 inches. The screw, which is of silver, is $2\frac{1}{2}$ inches long, and has 25 threads to an inch, the diameter at the outer edge of the screw is 0·57 inch, and at the bottom of the screw is 0·53 inch in diameter; it was not possible to determine the amount of heat stopped by the outer cylinder, as both cylinders were screwed to the same end-piece.

95. In the summer of 1844, a new actinometer (with the old screw) was obtained from the same maker. The cylinder and thermometer tube were inclosed in a mahogany box, open at one side; the compartment containing the cylinder filled with the blue liquid is lined with black velvet, and is covered by a slip of plate-glass. The dimensions were as follow:—Glass cylinder, $5\frac{1}{2}$ inches long; mean external diameter, about 1·05 inch; the mercury, filling four inches of the thermometer tube, weighed 16·7 grains; the length of 100 divisions of the scale are equal to 5·51 inches. The cylinder of this instrument was again destroyed in the winter of 1846–7, by the freezing of the liquid. The previous dimensions of the cylinder belonging to the actinometer, from June 1844 till February 1847, are considered to be very near the truth; they are, however, only given from the dimensions of the cylinder in the actinometer at present, which is of the same size. The actinometer was placed in a small revolving frame during observations after June 1844, by means of which the face of the actinometer was always presented to the perpendicular incidence of the sun's rays; at the end of the same table upon which the revolving frame was placed, a double wooden screen was hung by cords passing over pulleys; the instrument could be shaded or exposed to the sun by the observer instantaneously. The following are the results of series of observations for the amount of heat stopped by the plate-glass used in the instrument after June 1844, and marked A:—

		Sc. Div.
1846. June 1^d 10^h 16^m A.M. Mean time.	Glass plate A on; mean effect of sun in 60^s	= 9·47
10 37	off	=12·04
10 56	on	= 9·70
Mean effect of sun in 60^s, glass plate A on		= 9·58

Proportion of whole heat stopped by the glass plate A, =0·204.

		Sc. Div.
1846. June 3^d 9^h 51^m A.M. Mean time.	Glass plate A on; mean effect of sun in 60^s	= 9·29
10 12	off	=12·83
10 33	on	= 9·82
10 51	off	=12·88
11 10	on	=10·33
Mean effect of sun in 60^s, glass plate A off		=12·85
Mean	on	= 9·81

Proportion of whole heat stopped by glass plate A, =0·237.

Giving the last result two values, we find, from both determinations,

Proportion of whole heat stopped by glass plate A, $=0{\cdot}226$.

96. Besides the breaking of the cylinders by the freezing of the liquid, the instrument has been rendered useless for good experiments several times by the deposition of a brownish oily sediment, which finds its way into the thermometer tube, and this though the liquid had been long prepared by the maker. When this deposition of sediment occurred, the instrument was sent to the maker to be cleaned; the observations, therefore, in this volume, are nearly unaffected by it.

RAIN-GAUGES.

97. The Observatory rain-guage is placed in a space, enclosed by a paling on the top of the Observatory hill, with a good exposure on all sides. The funnel-mouth is 6·1 inches in diameter, 8 inches above the soil, and 218 feet above the level of the sea. The quantity of rain is measured at noon by pouring it into a glass tube, graduated with reference to the aperture of the funnel.

98. The monthly results of two other gauges are given in the abstracts. One is placed on the top of the greenhouse roof, 680 feet NNE. of the Observatory gauge; the funnel-mouth is 6·7 inches in diameter, it is connected with a graduated tube within the greenhouse, it is 18 feet from the ground, and 192 feet above the level of the sea. This gauge is sheltered to the E. and NE. by trees, and its indications are therefore less trustworthy, especially during easterly winds; the amount of rain received in the funnel is also affected by the gusts of wind deflected from the sloping roof.

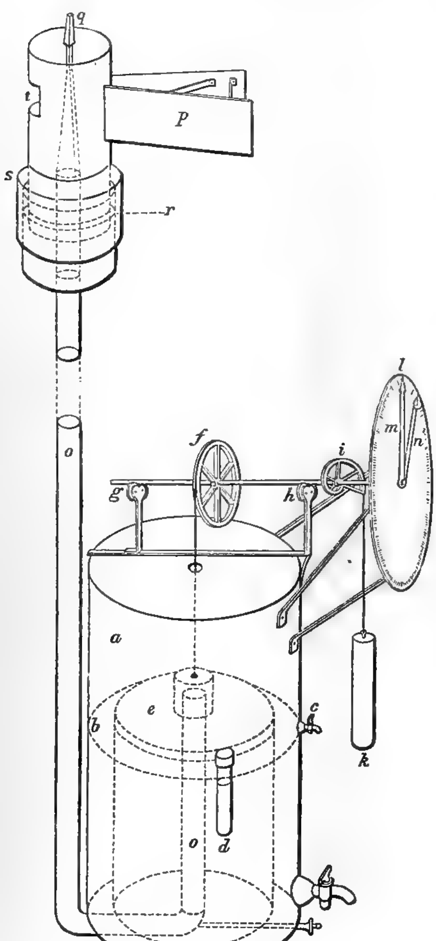
99. The other gauge is in the middle of the Makerstoun garden, with a good exposure; the funnel-mouth is 6·7 inches in diameter, is $6\frac{1}{2}$ feet above the soil, 171 feet above the level of the sea, and about 620 feet N. by E. of the Observatory gauge. The funnel is connected with a graduated tube. The greenhouse and garden gauges were observed by Mr MACGALL, the head gardener, the former daily, the latter monthly.

VANES AND ANEMOMETER.

100. The vane is placed on the north wall of the Observatory, and by means of a rod and geering-wheels it indicates the direction of the wind on a dial-plate within the building; this vane (occupying the position W′ in the plan, Plate I.) was found too heavy for light winds, and the directions of these were estimated for some time from a ribbon-vane. On July 6, 1844, a small vane formed of two crow feathers (one from each wing) placed back to back, was erected above the door of the Observatory. This vane was not connected with any dial-plate, and the direc-

tion of the wind could be estimated from it during the day only. On November 13, 1844, a larger vane was formed of four large feathers from a turkey's tail, this vane was mounted on a long and light fir-rod, which passed through the roof of the Observatory, and had an index attached to its lower extremity, which indicated the direction of the wind on a compass fixed to the ceiling of the Observatory. This vane indicated the direction of the lightest winds, and the direction of the wind was generally taken from it after November 13, 1844. The direction of the wind is indicated in this volume by the *number* of the point of the compass, reckoning N = 0, E = 8, S = 16, W = 24.

101. The anemometer, the invention of Mr R. ADIE, of Liverpool, was made by Messrs ADIE and SON, of Edinburgh; it occupies the north-east corner of the Observatory. This instrument will be best understood by a reference to the annexed figure: *a* is a cistern containing water to the level *b*, *c* being a turn-cock for letting the water off to the exact level, and *d* a glass-gauge to shew when the water becomes too low, from evaporation or otherwise; an inverted vessel *e* is suspended in the water by a cord passing over the wheel *f*, whose axle rests on friction-rollers at *g* and *h*; *i* is a spiral, which has a cord wrapped on it carrying a weight *k*, which balances the vessel *e*; *l* is a dial, graduated on the face near the circumference; *m* an index, attached to the common axle of the wheel and spiral; *n* a loose index under the index *m*, which the latter carries forward by means of a projecting pin near the extremity; *o* a tube passing under the cistern *a*, which, entering the bottom, proceeds upwards within the vessel *e* till its open extremity is above the level of the water in a neck of the vessel *e*; the other end of the tube *o* is six feet above the outer wall of the Observatory, where it is capped by a vane *p*; at the top of the tube *o* three brass rods are joined, which carry a small tube in which a pin within the top piece *q* rests or turns; the tube *o* is double at the top, containing between the tubes a quantity of mercury to the level *r*, the continuation of the cylindrical body of



the vane enters the mercury, and a double portion s acts as an outer cover to the mercury cistern; t is an aperture, 2 inches square. When the wind blows, this aperture is presented to it, the wind then presses on the column of air within the tube o (being prevented from escaping under the vane by the mercury), and ultimately on the top surface of the vessel e, forcing the latter up, turning the axle carrying the index m, which carries before it the index n, leaving it at its farthest excursion. The dial is graduated as follows:—The surface of the top of the vessel e on which the wind presses is 78 square inches, therefore a pressure of 1 lb. on this surface is equivalent to $\frac{144}{78}$ lb. on a square foot. Different weights are suspended on the wheel f, acting oppositely to the vessel e, and the position of the index for each weight shews the pressure on a square foot of surface equal to the weight suspended multiplied by the above ratio. The spiral, on which the weight k acts, is the involute of a circle whose radius $r = \dfrac{R}{2\pi}$ where R is the radius of the wheel f, and 2π is the circumference to radius of one, if the vessel e were homogeneous throughout its depth, the equal increments of motion in the index would correspond to equal increments of pressure.*

102. The instrument is observed in the following manner:—About 2^m before the observation hour the pressure shewn by the index n is registered as the maximum pressure; this index is then put back to zero, and from 7^m to 10^m afterwards, the position to which it has again been carried by the index m is noted as the present pressure; the index n is then set to zero, and a similar double observation made at the next observation hour. It is conceived that this instrument can be depended on for the purpose of determining the laws of variation of the pressure of wind; for absolute results, an integrating instrument is essential.

STATE OF THE SKY.

103. The extent of sky clouded is estimated; the whole sky covered with clouds being noted as 10, and the complete absence of clouds as zero. The motions of the clouds are determined as follows:—A well-marked portion of cloud which passes, or has passed, through the zenith, is watched till the direction is found in which it seems to run down, or parallel to, one corner of the Observatory; the walls of the

* The application of the involute of the circle as the spiral is due, I believe, to Professor FORBES. It is easily shewn that if the vessel e be homogeneous, w being the weight of a ring whose depth is one inch, P the pressure which the wind exerts on the top of e diminishing its weight, β the corresponding arc through which the circumference of the wheel f moves (or the length of cord wrapped on the wheel), W the weight of the counterpoise k, and σ the specific gravity of the material (zinc) of which e is formed, then

$$\frac{P}{\beta} = \frac{W}{2\pi} + \frac{w}{\sigma}$$

a constant ratio.

Observatory are in the meridian and prime vertical, and the points of the compass, reckoning from each corner as a centre, are marked upon the paling surrounding the Observatory; the observer, therefore, sees at once the direction of motion of the cloud on the paling; when a portion of cloud cannot be seen which has passed, or is about to pass, through the zenith, it is generally easy to determine very nearly the vanishing point of the motion of any portion of cloud, by watching its progress for a short period; there can be no hesitation in saying, that the motions of the upper currents of air thus observed, are better determined than the motion of the lower or surface current observed from the vane. The directions of motion of the clouds in three strata (scud, including cumuli; cirro-stratus, including cirro-cumuli; and cirri), are given in numbers of points of the compass, reckoning $N = 0$, $E = 8$, $S = 16$, $W = 24$. The nomenclature adopted is that of Mr HOWARD, with certain combinations, which are, in general, sufficiently descriptive.

104. After June 30, 1844, full sunshine is indicated in the column of meteorological remarks by the symbol ⊙; when the sun shone through a cloud so as to project a distinct shadow, it is indicated by the symbol ⊖; when the cloud was very thin, this was indicated occasionally by the symbol ⦶; and when the sun's disc only was visible, the symbol ● is used; similar symbols are used for the moon.

105. The heaviness of the rain falling at the time of observation has been estimated after May 10^d, and is noted in the column of meteorological remarks, upon the supposition that the heaviest fall is 10: thus, $rain^3$, is rather heavy rain; $rain^7$, is the heaviest observed in 1844; $rain^{0\cdot1}$, is just perceptible; and $rain^{0\cdot5}$, is a light, spitting, Scotch mist.

CLOCK.

106. The mean time clock is by DENT of London; it is kept at Göttingen mean time by comparisons with the transit clocks in the Astronomical Observatory, the errors of which are determined by Sir THOMAS BRISBANE, by myself, or by Mr WELSH. The rate of the clock is kept small.

DESCRIPTION OF THE TABLES OF OBSERVATIONS.

107. *Hourly Observations of Magnetometers*, pages 1–69.

The first column contains the Göttingen mean solar time, astronomical reckoning, of the observations of the declination magnetometer. Göttengen time is $49^m\ 50^s$ in advance of Makerstoun time. The second column gives the absolute westerly declination in degrees, minutes, and decimals of a minute, deduced as described, No. 17.

The third column contains the observations of the bifilar magnetometer in scale divisions, corrected for temperature to 26° Fahr., see Nos. 69 and 73; increasing numbers indicate increasing force. The bifilar is observed 2^m after the declination

The fourth column contains the temperature of the bifilar magnet in degrees of Fahrenheit.

The fifth column gives the readings of the balance magnetometer in micrometer divisions, corrected for temperature to 26° Fahr., see No. 79; increasing numbers indicate increasing force. The balance is observed 3^m after the declination.

The sixth column contains the temperature of the balance magnet in degrees of Fahrenheit.

The seventh column contains the observer's initial, see No. 5.

At the foot of each page the time is given during which the declination magnet has remained untouched, or the amount of torsion found in the suspension thread when that has been determined, see No. 12. The value k of one scale division of the bifilar magnetometer, the whole horizontal component being unity (see No. 38), and the value of k of one micrometer division of the balance magnetometer, the whole vertical component being unity, are also given; the value of the latter given here, 0·0000085, was deduced from observations made in 1846 (see No. 59), and is erroneous, the true value is k=0·000010 (see Nos. 58 and 59); this value has been used in the abstracts of results.

108. *Term-Day Observations of Magnetometers*, pages 72–89.

The first column contains the minute of Göttingen mean time of the declination observations, the hour being given in the middle of each triplet of columns.

The second and third columns contain the bifilar and balance magnetometer readings, reduced to the temperature of 26° Fahr., as in the hourly observations. The temperatures of the magnets at the commencement of each hour will be found with the hourly observations, and the observer's initial for each hour are in the same place. The corrections for temperature are applied to the observations in the following manner:—The correction to the first observation of each hour being applied for the known temperature of each magnet, the temperature is supposed to change uniformly throughout the hour, and the corrections for the intermediate observations are interpolated between the initial corrections.

109. *Extra Observations of Magnetometers*, pages 92–157.

These observations are made generally during magnetic disturbances. The same remarks apply with reference to temperature corrections, &c., as for the term-day observations, excepting that the Göttingen day and hour are given in the first column, and the minute is given for the observations of each instrument. Notes upon the Auroræ boreales observed are given, with the times of the phenomena in Göttingen mean time.

110. *Observations of Magnetic Dip*, and *for the Absolute Horizontal Intensity.* See Nos. 19, &c., and 84.

111. *Hourly Meteorological Observations*, pages 172–308.

The first column contains the day and hour, Göttingen mean time, of the observations, all of which are made within a few minutes of the hour, and generally in

the order noted below. The Göttingen mean time is $49^{m}\ 50^{s}$ in advance of the Makerstoun time. The second column gives the height of the barometer, corrected to 32° Fahr., see No. 88. The barometer is generally observed between the observations of the declination and bifilar magnetometers, that is, about 70^{s} after the hour.

The third and fourth columns give the *observed* readings of the dry and wet bulb thermometers in degrees of Fahrenheit, *uncorrected* for scale errors, see No. 91, and the fifth column gives the difference of the observed readings of the two thermometers. The dry and wet bulb thermometers are generally read about $1\frac{1}{2}^{m}$ before the hour. The sixth column contains the maximum pressure of wind on a square foot of surface which has occurred since the previous observation, see No. 102; this maximum is generally noted, and the index set back 2^{m} or 1^{m} before the hour.

The seventh column contains the maximum pressure of wind on a square foot of surface within from 8^{m} to 10^{m} at the time of observation, namely, from 2^{m} or 1^{m} before the hour till 6^{m} or 9^{m} after the hour.

The eighth column contains the direction of the wind read from the dial-plate of the vane, and given in numbers of points of the compass, reckoning N = 0, E = 8, S = 16, W = 24.

The ninth column gives the directions of motion of three strata of clouds in numbers of points of the compass, namely, of scud, cirro-stratus, and cirrus; thus, September $25^{d}\ 2^{h}$, the surface wind, by the vane, blowing from 22 (WSW.), the scud was moving from 24 (W.), the cirro-cumulo-stratus was moving from 27 (NW. by W.), and the cirri were moving from 30 (NNW), see No. 103.

The tenth column contains the estimated extent of sky clouded, the whole hemisphere covered being 10.

The eleventh column contains the species of clouds observed, with other meteorological notes, see Nos. 103, 104, and 105.

The observer's initial will be found at the corresponding hour of hourly magnetical observations.

112. *Daily Meteorological Observations*, pages 310–312.

The first column contains the civil day of observation, and the first column of each triplet of columns thereafter contains the minimum temperature noted from the self-registering thermometer about 10^{h} A.M.; the second column contains the maximum temperature noted from the self-registering thermometer at 5^{h} P.M., see No. 92; and the third column contains the amount of rain found at noon in the Observatory rain-gauge. In page 311, the temperature of water in two pump-wells is given, see No. 93. In page 312 are given the maximum temperature of solar radiation, and the minimum temperature of terrestrial radiation for portion of the year, see No. 92.

113. *Extra Meteorological Observations*, pages 313–325.

The first column of observations of the actinometer contains the Makerstoun

mean time of the first reading given in the third column, the reading in the fourth column being made 60 seconds after; the second column tells whether both of these observations have been made with the actinometer in the sun or in the shade; the fifth column gives the change of reading in 60^s; the sixth column contains the effect of the sun in changing the reading; the seventh column contains the mean effect for a group; and the eighth column contains the sun's altitude for the mean time corresponding to the middle of each group.

The readings of the barometer (corrected to 32° Fahr.) and of the dry and wet bulb thermometers, together with meteorological remarks, are given in the foot-notes; other observations will be found in their proper places among the hourly observations.

114. Additional meteorological notes are given after the observations of the actinometer; these consist of observations of shooting stars, thunder-storms, auroral clouds, dates of flowering of plants, times of the commencement of the morning-song of birds, &c.

115. *Abstracts of Results*, pages 329–447.

These Tables have appended or prefixed to them all requisite explanations, together with remarks on the conclusions deduced.

116. *Curves of Term-Day Observations, &c.*

The term-day observations, as corrected, pages 72–89, having been projected and drawn with the greatest accuracy by Mr WELSH on lithographed curve paper, they have been transferred by the anastatic process, in 12 Plates, given at the end of the volume; the remaining plates similarly drawn and transferred are Plate XIV., containing the projections of the daily means of the observations of the three magnetometers as given Table I., page 330, Table XXII. (in scale divisions), page 355, and Table XXXVIII. (in micrometer divisions), page 373. The projected means for the horizontal component exhibit the law of variation for the relative positions of the sun, moon, and earth (the moon's age being the argument), in several lunations, see page 358. Full moon is indicated at the head of the Plate by the symbol ○, new moon by ●.

Plate XV. contains the projections of the diurnal ranges of the three magnetometers, from Table III., p. 335, Table XXIV. (in scale divisions), page 359, and Table XL. (in micrometer divisions), page 376: it also contains the projections of the approximate daily mean disturbances for each instrument, that is, the mean differences of a single observation in each day from the monthly mean for the corresponding hour, as obtained from Table XIV., page 346, Table XXXIV., page 368, and Table L., page 385. The projections on this Plate also exhibit the laws of variation with reference to the moon's age.

Plate XVI. contains the projections of the hourly means for magnetical and meteorological observations. The hourly means obtained from all the magnetical observations are projected in continuous lines; those obtained from the 60 days in the year most free from intermittent disturbances (see page 338) are projected in

dotted lines. The declination, from the last column of Table V., page 337, and of Table IX., page 340. The horizontal component, from the last column of Table XXVI., page 360, and of Table XXIX., page 362. The vertical component, from the last column of Table XLII., page 378, and of Table XLV., page 380. The inclination, from the last column of Table LV., page 391, and from line 19, page 392. The total force, from the last column of Table LVIII., page 396, and from line 19, page 397.

The meteorological curves are projected from the following Tables:—

The barometer, from the last column of Table XXII., page 423.

The temperature of the air, from the last column of Table III., page 407.

The pressure of aqueous vapour, from the last column of Table XIII., page 415.

The relative humidity, from the last column of Table XVII., page 418.

The pressure of wind, from the last column of Table XXXII., page 430.

The direction of the resultant pressure of wind, from the last column of Table XXXVI., page 439.

The extent of clouded sky, from the last column of Table XLI., page 444.

All the reductions connected with the quantities given in this volume have been made by my assistants, Messrs WELSH and HOGG, and by myself: each computation has been performed twice at least, and that generally by different individuals.

HOURLY OBSERVATIONS

OF

MAGNETOMETERS.

MAKERSTOUN OBSERVATORY,

1844.

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
0	13	0	25 19·51	518·3	42·6	794·4	42·5	B
	14	0	17·53	517·7	42·2	790·3	42·0	B
	15	0	18·20	517·6	41·8	794·1	41·5	B
	16	0	18·13	518·7	41·3	793·7	41·0	B
	17	0	17·87	519·0	40·8	789·3	40·5	B
	18	0	18·03	519·9	40·3	791·6	40·0	B
	19	0	18·43	520·6	39·8	793·0	39·4	B
	20	0	18·79	522·9	39·3	789·2	39·0	B
	21	0	18·45	522·4	38·9	789·5	38·5	W
	22	0	19·21	518·3	38·6	785·4	38·3	H
	23	0	19·49	517·9	38·3	799·8	38·3	H
1	0	0	22·08	516·2	38·2	797·5	38·3	H
	1	0	24·20	516·4	38·2	803·2	38·4	H
	2	0	22·94	523·7	38·2	796·6	38·6	H
	3	0	20·87	523·3	38·5	810·0	39·0	H
	4	0	22·35	520·3	38·9	808·6	39·4	H
	5	0	21·68	512·7	38·9	809·4	39·0	H
	6	0	21·15	515·1	38·8	808·2	39·0	B
	7	0	21·32	515·2	38·5	804·9	38·8	H
	8	0	20·13	515·4	38·3	810·6	38·5	H
	9	0	19·71	508·4	38·0	817·1	38·2	H
	10	0	13·32	516·3	37·7	811·8	37·7	B
	11	0	20·85	515·7	37·2	799·1	37·2	W
	12	0	20·60	516·4	36·8	797·2	36·7	W
	13	0	25 20·72	516·8	36·3	797·3	36·2	W
	14	0	20·82	518·3	35·9	792·0	35·7	W
	15	0	21·39	519·3	35·5	790·1	35·2	W
	16	0	21·27	517·0	35·0	788·4	34·7	W
	17	0	20·79	518·2	34·7	787·8	34·4	W
	18	0	20·53	519·3	34·3	788·5	34·0	W
	19	0	20·55	520·8	34·0	788·4	33·8	W
	20	0	20·11	522·0	33·8	787·3	33·6	W
	21	0	20·23	518·6	33·5	794·3	33·4	H
	22	0	21·15	517·6	33·2	796·4	33·5	H
	23	0	21·83	514·6	33·0	796·3	33·2	H
2	0	0	23·29	517·4	32·9	799·4	33·0	H
	1	0	24·79	511·5	32·9	800·5	33·0	H
	2	0	26·23	512·2	32·9	812·8	33·3	H
	3	0	25·56	516·8	32·9	811·2	33·3	H
	4	0	25·56	514·0	33·0	809·1	33·5	H
	5	0	21·95	516·6	33·2	807·2	33·4	H
	6	0	21·71	516·4	33·0	809·3	33·3	W
	7	0†	17·53	504·7	32·9	822·3	33·1	W
	8	0†	21·16	498·9	32·7	844·8	32·8	W
	9	0†	16·21	519·6	32·3	828·9	32·5	W
	10	0†	14·13	516·0	32·0	805·1	32·2	W
	11	0	17·17	512·0	31·7	792·8	32·0	H
	12	0	16·60	516·2	31·2	784·2	31·5	H
	13	0	25 19·22	515·3	30·9	789·9	31·0	H
	14	0	21·23	516·0	30·7	795·5	30·8	H
	15	0	21·19	515·1	30·4	792·4	30·6	H
	16	0	21·23	519·0	30·3	786·1	30·3	H
	17	0	20·69	520·8	30·2	791·7	30·3	H
	18	0	20·76	521·3	30·1	792·5	30·3	H
	19	0	20·90	519·0	30·2	788·6	30·5	H
	20	0	20·85	519·4	30·3	792·7	30·7	H
2	21	0	25 20·23	517·9	30·7	799·6	31·2	B
	22	0	21·14	515·9	31·0	798·2	31·4	B
	23	0	22·25	516·3	31·5	802·2	32·1	W
3	0	0	23·46	517·5	33·0	813·0	35·3	B
	1	0	24·22	521·9	37·6	795·8	37·7	W
	2	0	23·36	521·8	41·0	792·1	41·2	B
	3	0	21·93	521·4	43·0	793·2	42·5	W
	4	0	21·17	520·5	44·0	798·6	44·0	B
	5	0	20·84	521·2	44·5	792·7	45·0	B
	6	0	20·69	521·2	44·9	789·1	45·9	H
	7	0	20·55	522·3	45·0	790·8	46·5	H
	8	0	20·42	523·8	44·9	787·1	46·1	H
	9	0	20·27	523·4	44·7	789·2	46·0	H
	10	0	20·30	520·4	44·5	793·5	46·0	H
	11	0	20·15	517·2	44·3	799·3	45·9	B
	12	0	20·25	517·4	44·1	804·2	45·7	B
	13	0†	25 20·76	525·0	43·9	793·4	45·4	B
	14	0†	19·96	520·1	43·6	794·8	45·1	B
	15	0	20·23	518·1	43·0	794·7	44·6	B
	16	0	20·50	520·1	42·5	786·4	43·9	B
	17	0	20·82	520·9	42·0	783·5	43·4	B
	18	0	20·79	522·3	41·7	780·7	42·9	B
	19	0	20·38	523·1	41·3	780·6	42·5	B
	20	0	20·15	523·3	40·9	778·6	42·0	B
	21	0	19·81	523·1	40·7	781·0	41·6	W
	22	0	20·18	519·9	40·4	787·0	41·4	W
	23	0	21·26	521·6	40·1	778·3	41·1	W
4	0	0	22·89	519·6	40·0	775·6	41·0	W
	1	0	23·45	519·3	39·9	784·9	40·8	W
	2	0	23·75	526·9	39·9	785·5	40·8	W
	3	15	23·01	521·9	39·9	797·2	40·7	W
	4	0	21·56	525·9	39·8	791·2	40·6	W
	5	0	21·97	525·0	39·7	784·6	40·5	W
	6	0	20·82	523·7	39·6	784·8	40·4	B
	7	0	20·89	526·3	39·5	781·2	40·2	B
	8	0	21·01	521·3	39·3	787·6	40·0	B
	9	0†	21·68	515·9	39·1	805·8	39·8	B
	10	0†	19·95	511·1	39·0	834·0	40·0	B
	11	0†	19·55	515·9	39·0	821·6	40·0	W
	12	0	20·11	518·8	39·0	804·2	40·0	W
	13	0	25 17·46	520·4	39·0	804·4	39·9	W
	14	0	20·43	525·3	39·0	806·6	39·9	W
	15	0	20·18	518·8	39·0	800·6	39·9	W
	16	0†	24·32	514·9	39·0	780·4	39·9	W
	17	0†	23·11	521·1	39·2	733·6	40·4	W
	18	0	17·67	527·0	39·5	727·1	40·5	W
	19	0	19·32	525·5	39·7	732·1	40·5	W
	20	0	21·06	524·6	39·9	751·2	40·7	W
	21	0	23·46	515·8	39·9	766·2	40·9	H
	22	0†	24·12	521·8	40·0	765·9	41·2	H
	23	0†	26·96	515·5	40·5	772·3	41·5	H
5	0	7†	24·59	518·6	41·1	773·9	42·0	H
	1	0†	29·27	513·9	41·6	782·7	42·5	H
	2	0†	25·31	519·5	42·1	797·9	43·2	H
	3	0	24·93	523·7	42·7	795·5	43·6	H
	4	0	23·02	525·6	43·3	809·3	44·2	H

DECLINATION. Torsion removed,—Jan. 1d 3h, + 2°. Effect of + 10° of Torsion = − 0′·84.
BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs. d.	h.	m.	DECLINATION. ° ′	BIFILAR. Corrected. Sc. Div.	BIFILAR. Thermometer. °	BALANCE. Corrected. Mic. Div.	BALANCE. Thermometer. °	Observer's Initial.
5	5	0	25 23·09	518·9	43·8	804·8	44·5	H
	6	0†	20·05	523·8	44·3	818·7	45·0	W
	7	0†	18·88	519·0	44·8	812·3	45·6	W
	8	0†	10·56	503·4	45·2	841·5	46·5	W
	9	0†	17·06	514·9	45·7	812·1	47·1	W
	10	0†	13·76	525·1	46·0	805·3	47·5	W
	11	0†	19·93	521·1	46·3	767·5	47·5	H
	12	0†	21·16	514·1	46·4	778·0	47·5	H
	13	0	25 21·53	515·8	46·4	784·5	47·3	H
	14	0	21·53	514·7	46·3	829·6	47·3	H
	15	0†	20·49	513·0	46·2	780·6	47·1	H
	16	0†	26·82	517·9	46·2	762·1	47·1	H
	17	0†	20·60	516·1	46·2	769·6	47·0	H
	18	0†	18·63	523·3	46·2	768·5	47·2	H
	19	0†	26·07	511·7	46·1	774·5	47·0	H
	20	0†	24·26	520·9	46·0	769·7	47·0	H
	21	0	21·74	519·3	46·0	778·4	46·7	B
	22	0	23·98	514·1	45·9	781·8	46·5	B
	23	0†	25·11	501·7	45·7	794·6	46·3	W
6	0	0†	24·66	508·3	45·6	794·7	46·1	B
	1	0†	24·59	516·3	45·5	790·9	46·0	B
	2	0†	22·69	517·7	45·5	797·5	46·0	W
	3	0	23·61	522·2	45·6	803·1	46·2	W
	4	0†	17·33	507·2	45·7	827·6	46·3	W
	5	0†	21·56	523·3	45·9	814·3	46·4	W
	6	0†	23·18	519·9	46·0	806·2	46·9	H
	7	0†	18·21	520·9	46·0	796·3	47·0	H
	8	0†	20·96	520·1	46·0	789·7	46·8	H
	9	0†	03·02	539·5	45·9	778·9	46·3	H
	10	0†	13·67	514·2	45·7	767·0	46·3	H
	11	0†	18·84	511·5	45·6	777·9	46·2	B
	12	0†	20·38	517·8	45·4	766·9	46·0	B
7	13	0	25 20·96	517·8	41·1	756·2	41·2	W
	14	0†	19·98	517·7	40·9	776·7	41·0	W
	15	0†	21·84	517·0	40·8	787·2	40·8	W
	16	0†	21·32	517·6	40·6	789·8	40·7	W
	17	0	21·39	516·3	40·3	778·2	40·5	W
	18	0	21·39	517·6	40·0	781·1	40·2	W
	19	0	23·41	520·7	39·9	780·9	40·0	W
	20	0	20·74	520·7	39·8	785·3	39·9	W
	21	0†	20·62	520·6	39·6	793·5	39·8	H
	22	0†	20·25	516·5	39·4	790·5	39·6	H
	23	0	21·27	511·7	39·4	791·5	39·5	B
8	0	0	21·93	515·8	39·4	784·2	39·7	H
	1	0	23·05	518·7	39·4	793·1	39·9	H
	2	0	23·46	512·8	39·3	804·6	39·9	B
	3	0	28·18	519·2	39·3	799·7	39·9	H
	4	0	23·02	519·1	39·4	797·8	40·0	H
	5	0	20·25	521·9	39·6	802·2	40·0	W
	6	0†	19·45	519·0	39·7	818·3	40·2	W
	7	0†	15·49	513·2	39·9	825·0	40·5	W
	8	0†	18·81	518·1	40·0	814·1	40·8	W
	9	0†	20·05	519·3	40·1	812·6	41·0	W
	10	0†	18·67	515·3	40·1	813·4	40·8	W
	11	0†	12·65	520·4	40·2	751·7	41·0	H
	12	0†	15·56	517·1	40·3	760·8	41·5	H
8	13	0	25 20·18	517·0	40·4	757·0	41·4	H
	14	0	20·85	513·1	40·4	771·7	41·1	H
	15	0	17·51	510·6	40·3	774·7	40·9	H
	16	0	21·93	510·7	40·0	779·4	40·7	H
	17	0	20·79	513·9	39·8	777·4	40·4	H
	18	25	19·12	519·5	39·7	781·0	40·1	H
	19	0†	21·26	522·3	39·7	784·9	40·0	H
	20	0†	20·40	522·3	39·5	779·5	39·9	H
	21	0†	20·22	520·0	39·3	783·7	39·5	B
	22	0	19·88	513·8	39·1	793·2	39·3	B
	23	0	23·99	512·1	38·9	790·1	39·0	B
9	0	0	22·91	513·6	38·8	794·9	38·8	B
	1	0	24·25	513·1	38·6	798·3	38·5	B
	2	0†	22·20	516·2	38·3	799·8	38·3	B
	3	0†	22·18	522·2	38·1	807·6	38·1	B
	4	0†	21·68	518·3	38·0	810·0	38·0	B
	5	0†	19·73	520·2	37·8	811·1	37·8	B
	6	0†	18·68	509·7	37·6	817·1	37·7	H
	7	0†	23·34	512·2	37·4	819·5	37·5	H
	8	0†	16·60	518·8	37·4	792·9	37·9	H
	9	0†	15·36	510·1	37·4	792·1	37·9	H
	10	0†	20·02	512·1	37·3	793·3	37·9	H
	11	0†	15·58	514·9	37·2	791·8	37·5	B
	12	0†	18·95	515·6	37·1	799·6	37·6	B
	13	0†	25 20·18	513·9	37·0	793·1	37·5	B
	14	0†	19·82	515·5	37·0	791·3	37·4	B
	15	0†	21·19	511·1	36·9	789·8	37·3	B
	16	0†	22·10	518·7	36·9	767·7	37·4	B
	17	0†	20·18	517·3	36·9	768·0	37·4	B
	18	0†	20·43	518·0	36·9	772·9	37·3	B
	19	0†	19·84	520·9	36·9	777·6	37·3	B
	20	0†	22·25	516·0	36·9	783·4	37·3	B
	21	0†	19·37	517·9	36·9	783·2	37·3	W
	22	0†	22·40	516·5	36·9	788·0	37·3	W
	23	0†	21·03	515·1	36·9	798·3	37·5	W
10	0	0	21·53	514·1	37·0	795·7	37·6	W
	1	0	22·27	515·5	37·2	795·7	37·8	W
	2	0	22·00	515·4	37·6	800·0	38·0	W
	3	0	22·47	517·0	38·0	807·0	38·5	W
	4	0	28·13	524·1	39·0	797·1	39·4	H
	5	0	22·45	523·8	40·0	800·2	40·0	W
	6	0†	21·26	523·2	39·9	798·2	40·2	B
	7	0†	23·24	518·2	39·8	800·7	40·3	B
	8	0†	24·19	514·9	39·7	809·5	40·5	B
	9	0†	21·46	517·8	39·8	816·1	40·5	B
	10	0†	20·29	515·0	39·9	821·9	40·7	B
	11	0†	19·02	516·2	40·0	807·3	41·0	B
	12	0†	14·70	509·1	40·1	788·3	41·4	W
	13	0†	25 19·02	512·9	40·3	799·2	41·5	W
	14	0†	17·26	517·9	40·5	792·5	41·5	W
	15	0†	19·28	517·7	40·6	788·2	41·5	W
	16	0†	20·85	515·7	40·6	785·3	41·4	W
	17	0†	21·97	517·3	40·6	787·7	41·3	W
	18	0	21·03	518·8	40·6	787·5	41·1	W
	19	0†	21·29	517·8	40·5	786·8	41·0	W
	20	0†	22·60	517·3	40·4	784·5	41·0	W

DECLINATION. Magnet untouched, Jan. 1d—12d.

BIFILAR. Observed 2m after the Declination, $k = 0·000140$. BALANCE. Observed 3m after the Declination $k = 0·0000085$.

† Extra Observations made.

Jan. 10d 3h +. The inner box of the Bifilar Magnetometer replaced, having been removed since December 14, 1843.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
10	21	0	25	21·03	518·9	40·3	778·5	41·0	H
	22	0		21·84	518·1	40·3	780·8	40·8	H
	23	0		22·37	517·5	40·2	783·0	40·8	H
11	0	0		23·12	516·4	40·2	782·6	41·0	H
	1	0		23·88	509·6	40·4	786·6	41·7	H
	2	0		24·25	514·9	41·0	781·9	42·7	H
	3	0		24·42	524·2	41·7	783·7	43·5	H
	4	0		22·84	521·3	42·3	784·9	44·1	H
	5	0		23·11	520·5	42·8	791·4	44·3	H
	6	0		22·13	522·3	43·1	791·9	44·4	W
	7	0		21·63	518·0	43·2	798·2	44·3	W
	8	0		21·19	516·7	43·3	802·3	44·0	W
	9	0		22·84	519·3	43·1	798·4	43·9	W
	10	0		20·90	519·4	43·0	795·4	43·8	W
	11	0		20·18	517·4	43·0	794·3	43·7	H
	12	0†		17·68	516·1	42·9	796·8	43·9	H
	13	0	25	19·29	508·1	42·9	795·2	44·0	H
	14	0		16·41	515·0	43·0	791·4	44·0	H
	15	0		20·23	517·2	42·9	786·8	43·9	H
	16	0		19·49	519·0	43·0	787·6	43·9	H
	17	0		21·39	518·3	43·0	784·4	43·7	H
	18	0		20·97	518·7	43·1	785·8	43·7	H
	19	0		21·23	518·2	43·1	785·3	43·8	H
	20	0		21·03	516·8	43·1	785·3	43·9	H
	21	0		20·85	516·5	43·1	785·8	43·9	B
	22	0		20·76	516·9	43·1	782·4	43·9	B
	23	0		21·03	516·1	43·1	782·7	43·9	W
12	0	0		22·91	517·0	43·1	779·2	43·9	W
	1	0		23·01	517·8	43·2	780·1	44·0	W
	2	0		22·82	519·2	43·3	784·2	44·0	W
	3	0		21·37	518·1	43·4	795·2	44·1	W
	4	0		20·69	513·7	43·6	799·3	44·1	W
	5	0		20·80	520·0	43·6	801·7	44·2	W
	6	0		22·03	521·1	43·5	795·6	44·3	H
	7	0		20·99	521·4	43·5	793·4	44·3	H
	8	0		20·49	520·0	43·4	792·6	44·0	H
	9	0†		20·02	516·0	43·3	797·9	43·8	H
	10	0†		12·72	524·5	43·3	787·5	43·7	H
	11	0†		21·53	515·5	43·1	784·5	43·7	H
	12	0		20·29	515·7	43·0	786·0	43·3	W
	13	0	25	20·85	517·1	42·9	785·5	42·8	W
	14	0		20·49	518·1	42·5	784·5	42·3	W
	15	0		19·84	517·1	42·1	785·1	41·7	W
	16	0		19·24	519·6	41·8	783·1	41·2	W
	17	0		20·09	518·3	41·4	785·3	40·7	W
	18	0		20·16	517·3	41·0	785·7	40·1	W
	19	0		20·83	518·1	40·5	781·5	39·6	W
	20	0		20·72	519·9	40·0	782·5	39·0	W
	21	0		21·21	522·1	39·7	784·5	38·7	H
	22	0		21·79	519·1	39·2	792·5	38·4	B
	23	0		23·31	516·6	39·0	796·3	38·4	H
13	0	0		23·54	516·2	38·8	795·6	38·4	B
	1	0		23·25	520·0	38·7	797·0	38·7	H
	2	0		21·91	520·3	38·8	801·4	39·4	H
	3	0		20·43	522·7	39·1	803·8	40·0	W
	4	0		20·92	518·6	39·7	799·3	40·5	W
13	5	0	25	20·82	520·9	39·9	795·9	40·6	W
	6	0		20·58	522·1	40·0	795·2	40·6	W
	7	0		20·32	520·2	40·0	797·0	40·5	W
	8	0		19·95	517·0	40·0	800·8	40·3	W
	9	0		18·90	520·6	39·9	796·8	40·2	W
	10	0		18·21	522·4	39·9	792·9	40·0	W
	11	0		18·99	521·0	39·8	785·7	39·9	W
	12	0		20·08	519·2	39·6	783·0	39·6	W
14	13	0	25	20·92	514·8	37·9	791·0	37·5	H
	14	0		19·51	515·8	37·4	790·6	36·9	H
	15	0		19·41	516·6	37·0	790·9	36·4	H
	16	0		19·64	516·9	36·6	786·9	35·9	H
	17	0		19·51	518·8	36·2	785·9	35·3	H
	18	0		19·96	519·7	35·8	786·2	34·8	H
	19	0		20·02	520·0	35·3	787·5	34·2	H
	20	0		20·22	520·1	34·8	787·7	33·7	H
	21	0		20·47	518·0	34·3	790·8	33·1	W
	22	0		20·99	517·0	33·9	795·1	32·6	W
	23	0		21·57	514·6	33·5	796·9	32·4	W
15	0	0		22·87	514·5	33·1	797·3	32·4	W
	1	0		23·14	519·7	33·0	784·7	32·6	W
	2	0		22·75	523·2	33·0	789·9	33·1	W
	3	0		21·34	522·6	33·1	792·2	33·9	W
	4	0		21·23	521·7	33·6	789·2	34·0	W
	5	0		21·36	522·4	34·0	791·2	35·0	W
	6	0		20·76	522·0	34·4	789·8	35·3	H
	7	0		20·76	523·2	34·7	788·2	35·4	H
	8	0		20·47	523·3	34·9	788·6	35·5	H
	9	0		20·18	522·5	34·9	788·1	35·6	H
	10	0		19·78	522·7	34·9	788·6	35·3	H
	11	0		20·18	520·5	34·9	792·1	35·0	B
	12	0		17·60	520·5	34·7	789·8	34·9	B
	13	0	25	18·97	519·5	34·6	786·2	34·7	B
	14	0		18·37	513·8	34·4	786·5	34·6	B
	15	0		20·83	518·4	34·3	784·1	34·5	B
	16	0		19·44	519·6	34·2	783·6	34·4	B
	17	0		20·36	521·5	34·1	782·8	34·4	B
	18	0		20·67	522·5	34·1	783·1	34·4	B
	19	0		20·25	521·7	34·0	784·2	34·3	B
	20	0		19·79	520·9	34·0	787·5	34·1	B
	21	0		19·62	520·2	34·0	790·4	34·1	H
	22	0		20·08	518·0	33·8	794·8	34·0	H
	23	0		22·17	516·0	33·7	797·4	34·1	H
16	0	0		22·94	515·5	33·7	798·5	34·0	H
	1	0		24·82	520·6	33·6	794·6	34·0	H
	2	0		24·05	523·5	33·7	794·4	34·3	H
	3	0		22·00	524·4	33·9	791·1	34·6	H
	4	0		21·56	522·9	34·2	793·5	35·2	H
	5	0		21·53	521·1	34·4	789·2	35·3	H
	6	0		20·89	521·1	34·8	790·9	35·5	B
	7	0		20·67	521·9	34·9	791·4	35·5	B
	8	0		20·18	521·9	34·9	789·5	35·3	B
	9	0		19·76	521·7	34·9	791·2	35·2	B
	10	0		18·77	521·7	34·8	791·6	35·0	B
	11	0		18·75	519·6	34·6	785·4	34·7	W
	12	0		18·90	521·1	34·5	781·4	34·5	W

DECLINATION. Torsion removed,—Jan. $12^d\ 2^h$, $-\ 1\frac{1}{2}^\circ$. Effect of $+\ 10^\circ$ of torsion $=\ -\ 0'{\cdot}84$.
BIFILAR. Observed 2^m after the Declination $k = 0{\cdot}000140$. BALANCE. Observed 3^m after the Declination, $k = 0{\cdot}0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
16	13	0	25	20·79	522·3	34·3	776·5	34·3	W
	14	0		20·79	519·1	34·1	782·1	34·3	W
	15	0		18·60	516·3	34·0	783·0	34·3	W
	16	0		21·01	519·3	34·0	783·6	34·3	W
	17	0		19·95	523·4	34·0	782·4	34·4	W
	18	0		20·52	522·4	34·0	782·3	34·4	W
	19	0		20·09	522·5	34·0	781·4	34·5	W
	20	0		19·42	523·5	34·0	782·3	34·6	W
	21	0		19·44	521·2	34·1	790·2	34·8	B
	22	0		20·18	519·0	34·3	792·6	34·9	B
	23	0		21·68	517·3	34·4	790·7	35·2	H
17	0	0		24·45	515·0	34·7	795·6	35·5	B
	1	0		25·91	518·1	35·0	793·2	36·1	B
	2	0		26·14	522·1	35·5	785·4	36·9	B
	3	0		23·76	523·6	36·1	781·8	37·8	B
	4	0		22·27	525·1	38·2	786·7	38·7	B
	5	0		20·83	524·0	38·3	785·4	39·2	B
	6	0		21·16	524·0	38·6	787·7	39·5	W
	7	0		21·26	522·2	38·7	788·6	39·6	W
	8	0†		21·68	516·9	38·7	792·4	39·5	W
	9	0†		19·26	519·4	38·7	801·0	39·5	W
	10	0		19·76	518·8	38·7	795·4	39·3	W
	11	0		19·48	521·4	38·6	788·9	38·9	B
	12	0		19·55	521·2	38·3	785·2	38·6	B
	13	0	25	19·51	520·0	38·1	786·4	38·3	B
	14	0		19·81	519·5	37·9	783·9	38·0	B
	15	0		20·23	519·3	37·7	781·2	37·7	B
	16	0		20·30	518·9	37·4	782·0	37·5	B
	17	0		20·50	520·1	37·2	778·2	37·3	B
	18	0		19·93	521·0	37·0	775·9	37·2	B
	19	0		19·95	521·6	37·0	774·5	37·0	B
	20	0		19·46	521·8	36·9	778·1	37·0	B
	21	0		19·28	519·7	36·7	778·2	37·0	W
	22	0		19·58	521·3	36·7	781·4	36·9	W
	23	0		20·49	518·5	36·7	788·9	37·4	W
18	0	0		22·47	518·6	37·0	794·3	38·2	W
	1	0		24·22	517·9	37·8	793·2	39·3	W
	2	0		24·72	521·7	38·5	790·6	40·1	W
	3	0		24·75	524·1	39·2	793·4	41·0	W
	4	0		27·10	522·1	40·0	792·9	41·7	W
	5	0		26·30	522·7	40·8	791·8	42·2	W
	6	0		19·98	519·1	41·1	816·8	42·5	B
	7	0		20·89	523·3	41·4	792·8	42·8	H
	8	0		19·88	521·7	41·7	785·3	43·0	H
	9	0		19·55	522·3	41·8	777·0	43·2	H
	10	0		19·51	519·2	42·0	779·9	43·2	W
	11	0†		13·49	517·1	42·1	780·9	43·2	B
	12	0†		19·41	516·8	42·2	770·5	43·5	H
	13	0†	25	20·85	515·9	42·7	769·5	44·3	H
	14	0†		20·18	518·8	42·9	769·9	44·5	H
	15	0		20·49	519·9	43·2	768·9	44·5	H
	16	0		20·03	519·7	43·3	767·0	44·4	H
	17	0		19·78	519·1	43·2	762·6	44·1	H
	18	0		20·76	522·3	43·2	762·4	44·0	H
	19	0		20·08	522·2	43·0	762·5	43·7	H
	20	0		19·93	520·7	42·9	763·7	43·5	H
18	21	0	25	19·31	519·2	42·8	768·9	43·2	B
	22	0		19·58	518·7	42·6	771·4	43·0	B
	23	0		20·35	517·8	42·5	769·9	43·0	W
19	0	0		21·59	517·4	42·3	775·2	42·9	B
	1	0		23·04	520·2	42·3	778·6	42·9	B
	2	0		22·96	521·7	42·3	779·3	43·0	B
	3	0		22·20	524·9	42·3	775·1	43·0	B
	4	0		21·57	522·7	42·3	775·7	42·9	B
	5	0		21·16	520·8	42·2	777·9	42·6	B
	6	0		20·90	520·6	42·2	776·3	42·5	H
	7	0		20·00	518·9	42·0	776·9	42·2	H
	8	0		20·20	521·5	41·8	772·0	42·0	H
	9	0		19·98	521·2	41·6	771·8	41·6	H
	10	0		19·75	519·7	41·4	773·7	41·4	H
	11	0		20·11	517·5	41·1	776·5	41·0	W
	12	0		20·36	519·1	41·0	778·1	40·7	W
	13	0	25	18·77	516·5	40·7	781·8	40·5	W
	14	0		18·94	516·1	40·4	783·5	40·2	W
	15	0		16·95	516·6	40·1	783·9	39·8	W
	16	0		18·38	517·5	39·9	784·0	39·5	W
	17	0		18·25	520·5	39·6	777·1	39·0	W
	18	0		19·31	519·9	39·1	774·8	38·5	W
	19	0		19·24	519·7	38·9	773·3	38·0	W
	20	0		19·64	519·6	38·5	769·8	37·5	W
	21	0		21·63	516·7	38·2	771·3	37·3	H
	22	0		22·48	522·3	37·8	766·7	37·0	H
	23	0		22·20	519·7	37·4	771·1	36·9	H
20	0	0		23·45	519·8	37·3	774·6	36·9	H
	1	0		22·17	519·1	37·2	779·4	37·0	H
	2	0		21·53	520·0	37·1	785·9	37·2	H
	3	0		20·82	519·3	37·1	786·8	37·4	H
	4	0		20·32	519·3	37·2	784·4	37·5	H
	5	0		20·32	519·6	37·2	785·4	37·5	H
	6	0		20·25	521·4	37·3	785·9	37·7	W
	7	0		20·49	520·8	37·3	785·3	37·5	W
	8	0		20·20	518·7	37·3	784·3	37·5	W
	9	0		20·05	517·4	37·2	784·7	37·4	W
	10	0		19·91	518·2	37·1	784·2	37·3	W
	11	0†		18·50	519·8	37·0	780·5	37·3	H
	12	0†		17·65	517·5	37·2	781·2	37·6	H
21	13	0	25	19·61	524·5	40·0	768·7	40·2	B
	14	0		19·10	518·3	39·9	779·0	40·0	B
	15	0		20·09	520·6	39·6	776·1	39·5	B
	16	0		20·53	521·4	39·3	775·1	39·2	B
	17	0		20·42	521·1	39·0	773·8	38·8	B
	18	0		20·22	521·3	38·9	775·4	38·5	B
	19	0		19·65	520·4	38·6	774·8	38·0	B
	20	0		19·58	520·2	38·2	776·3	37·8	B
	21	0		19·71	520·2	38·0	774·3	37·6	W
	22	0		20·49	523·2	37·8	772·8	37·6	H
	23	0		20·72	521·9	37·7	773·5	37·5	W
22	0	0		20·65	520·7	37·5	776·1	37·6	H
	1	0		21·26	523·7	37·5	779·3	37·8	H
	2	0		21·06	521·7	37·5	783·3	38·3	H
	3	0†		24·25	511·2	38·0	794·5	39·1	H
	4	0†		23·05	518·0	38·7	790·1	40·3	H

DECLINATION. Magnet untouched, Jan 12ᵈ—27ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
22	5	0	25	23·27	521·8	39·4	797·5	40·8	H
	6	0†		22·91	518·5	40·0	820·2	41·1	B
	7	0†		22·10	513·2	40·3	828·1	41·6	B
	8	0†		21·83	514·7	40·7	813·2	41·8	B
	9	0		19·32	517·4	40·9	791·2	41·7	B
	10	0		19·44	523·6	40·9	783·1	41·7	B
	11	0		20·00	517·7	40·9	784·1	41·6	W
	12	0		19·17	517·9	40·9	780·6	41·5	W
	13	0	25	19·58	519·0	40·9	779·7	41·5	W
	14	0		19·46	518·5	40·9	780·1	41·4	W
	15	0		19·69	518·3	40·8	782·3	41·3	W
	16	0		19·22	520·9	40·8	780·6	41·2	W
	17	0		19·08	522·6	40·7	773·1	41·0	W
	18	0		17·71	523·4	40·6	770·1	40·9	W
	19	0		18·30	523·6	40·5	770·2	40·8	W
	20	0		18·94	522·9	40·4	757·7	40·7	W
	21	0		20·67	523·7	40·2	763·0	40·5	B
	22	0		21·51	527·6	40·1	759·7	40·4	B
	23	0		22·10	524·2	40·0	762·3	40·4	B
23	0	0		21·76	518·6	40·0	774·8	40·4	B
	1	0		22·87	523·6	40·1	775·0	41·0	B
	2	0		22·64	526·5	40·5	778·4	41·7	B
	3	0		21·03	525·7	41·1	779·1	42·7	B
	4	0		22·11	523·7	41·9	779·6	43·3	B
	5	0		22·20	526·5	42·3	778·7	43·5	B
	6	0†		24·08	527·9	42·7	777·5	43·6	W
	7	0†		25·58	524·1	42·8	783·6	43·7	W
	8	0†		24·25	523·2	42·8	795·2	43·6	W
	9	0		22·11	525·3	42·7	795·7	43·0	W
	10	0		20·82	523·7	42·3	796·4	42·5	W
	11	0		19·10	524·2	41·9	787·1	41·9	H
	12	0		20·22	521·9	41·5	782·9	41·4	H
	13	0	25	19·56	520·1	41·2	779·4	40·8	H
	14	0		19·91	521·1	40·8	777·6	40·2	H
	15	0		19·81	521·9	40·4	775·8	39·8	H
	16	0		20·00	522·5	39·9	774·2	39·3	H
	17	0		20·11	520·9	39·5	776·2	38·8	H
	18	0		19·98	519·0	39·1	778·2	38·2	H
	19	0		20·08	518·7	38·6	777·0	37·7	H
	20	0		20·05	518·2	38·1	774·9	37·1	H
	21	0		20·79	517·9	37·7	775·3	36·6	W
	22	0		21·24	518·1	37·3	779·5	36·4	W
	23	0		21·39	518·0	37·0	780·7	36·2	W
24	0	0		21·30	518·4	36·8	787·4	36·4	W
	1	0		21·27	518·4	36·8	788·9	36·9	W
	2	0		21·24	520·8	37·0	788·1	37·8	W
	3	0		20·82	520·0	37·6	789·3	39·0	W
	4	0		20·90	520·4	38·6	788·1	40·0	W
	5	0		21·07	520·0	39·4	792·1	40·9	W
	6	0		20·77	520·8	40·0	792·7	41·3	H
	7	0		20·47	517·0	40·2	792·9	41·3	H
	8	0		19·46	523·4	40·3	792·4	41·4	H
	9	0		18·87	523·5	40·4	783·8	41·3	H
	10	0		18·67	522·5	40·5	780·7	41·1	H
	11	0		18·18	524·0	40·6	779·2	41·5	W
	12	0		20·06	524·5	40·8	774·0	41·8	W
24	13	0	25	18·03	521·4	41·0	772·9	42·4	D
	14	0		19·32	518·3	41·3	771·8	42·5	D
	15	0		16·12	517·8	41·7	754·0	43·1	D
	16	0		13·44	520·5	41·9	726·1	43·5	D
	17	0		13·59	527·8	42·1	685·4	43·6	D
	18	0		22·18	524·6	42·3	623·6	43·7	B
	19	0		28·93	524·5	42·5	650·3	43·8	B
	20	0		28·90	518·6	42·7	686·9	43·9	B
	21	0		27·39	513·8	42·8	719·3	44·0	H
	22	0		26·90	514·1	42·8	747·4	44·3	H
	23	0		28·92	509·0	42·9	767·7	44·3	H
25	0	0		28·25	513·8	43·0	777·8	44·3	H
	1	0		29·98	517·4	43·0	795·6	44·4	W
	2	0		30·10	514·6	43·2	820·3	44·4	W
	3	0		30·00	521·1	43·4	841·4	44·5	W
	4	0		24·23	515·4	43·6	834·4	44·7	B
	5	0		23·27	521·8	43·8	809·7	44·9	B
	6	0		21·10	519·4	44·0	792·9	45·2	D
	7	0		20·32	518·6	44·3	786·4	45·5	D
	8	0		19·15	523·0	44·6	773·6	45·8	H
	9	0		19·29	520·3	44·8	772·8	46·1	H
	10	0		19·12	522·9	44·9	764·6	46·0	H
	11	0		......	......	......	......	......	W
	12	0		19·88	517·2	44·9	765·5	45·4	W
	13	0	25	19·64	518·4	44·5	760·7	44·9	W
	14	0		19·41	520·2	44·0	754·0	44·3	W
	15	0		18·82	517·9	43·7	756·2	43·6	W
	16	0		19·75	515·8	43·3	762·6	43·1	W
	17	0		20·60	518·8	42·9	765·4	42·7	W
	18	0		20·55	519·4	42·6	768·6	42·3	W
	19	0		20·15	519·8	42·1	769·3	42·0	W
	20	0		19·56	521·9	41·9	767·3	41·5	W
	21	0		20·08	521·6	41·7	770·9	41·4	B
	22	0		20·89	519·0	41·4	776·0	41·2	B
	23	0		21·21	519·5	41·2	772·0	41·2	B
26	0	0		22·30	518·8	41·1	774·7	41·4	B
	1	0		22·60	518·4	41·2	775·0	41·9	B
	2	0		22·75	520·1	41·6	777·3	42·5	B
	3	0		21·76	521·3	42·1	778·5	43·4	B
	4	0		20·85	520·9	42·9	775·0	44·1	B
	5	0		20·94	523·3	43·3	777·7	44·5	B
	6	0		20·76	519·8	43·7	777·5	44·6	W
	7	0		20·25	520·2	43·9	777·2	44·7	W
	8	0		20·32	520·3	43·9	776·9	44·5	W
	9	0		20·52	520·9	43·9	775·7	44·4	W
	10	0		19·91	518·9	43·8	774·2	44·2	W
	11	0†		15·12	513·6	43·7	771·7	44·2	H
	12	0†		17·24	519·7	43·6	767·6	44·2	H
	13	0†	25	17·06	511·7	43·5	772·8	44·3	H
	14	0†		20·03	516·1	43·5	770·4	44·4	H
	15	0		20·85	515·4	43·6	771·6	44·5	H
	16	0		19·84	519·9	43·6	770·3	44·4	H
	17	0		20·02	518·7	43·6	771·5	44·4	H
	18	0		19·81	522·4	43·6	768·4	44·4	H
	19	0		19·35	524·8	43·7	770·1	44·5	W
	20	0		19·84	525·1	43·9	768·5	44·6	W

DECLINATION. Torsion removed,—Jan. 1ᵈ 3ʰ, + 2°. Effect of + 10° of Torsion = − 0′·84.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
26	21	0	25 16·80	525·3	44·0	756·8	44·8	B
	22	0	18·49	523·7	44·1	758·5	45·0	W
	23	0	19·65	520·8	44·3	769·7	43·5	W
27	0	0	20·17	519·2	44·6	......	......	W
	1	0	21·70	521·0	44·9	......	......	W
	2	0	20·40	522·8	45·5	......	......	W
	3	0	18·82	522·2	45·3	......	......	W
	4	0	17·58	519·4	45·6	......	......	W
	5	0	17·40	518·3	45·8	......	......	W
	6	0	17·40	521·0	45·9	......	......	W
	7	0	18·22	518·8	46·0	......	......	H
	8	0	17·56	515·2	46·0	......	......	H
	9	0	19·63	513·7	46·2	......	......	H
	10	0†	19·46	516·2	46·4	......	......	H
	11	5†	16·62	520·9	46·9	......	......	W
	12	0	19·64	521·1	47·0	740·7	49·6	B
28	13	0†	25 17·04	514·8	44·4	746·9	43·5	W
	14	0	18·82	516·2	44·0	744·9	43·4	W
	15	0	18·18	513·6	43·7	753·7	43·0	W
	16	0†	22·30	516·9	43·3	748·1	42·5	W
	17	0†	17·73	516·7	42·9	745·4	42·3	W
	18	0	18·68	519·9	42·6	748·7	41·9	W
	19	0	18·14	518·4	42·2	757·3	41·5	W
	20	0	18·88	519·2	42·0	759·6	41·1	W
	21	0	19·82	520·7	41·7	762·0	41·0	B
	22	0	20·25	516·9	41·4	765·9	40·8	B
	23	0	21·93	515·1	41·2	769·1	40·8	H
29	0	0	22·65	513·9	41·0	776·4	40·8	B
	1	0	22·92	515·3	40·9	780·5	40·9	H
	2	0	21·50	521·1	40·9	780·4	41·1	B
	3	0	21·53	519·9	41·2	781·7	41·4	B
	4	0	20·45	519·6	41·5	778·6	41·9	B
	5	0	20·76	520·7	41·8	776·5	42·3	B
	6	0	19·98	515·9	42·0	780·8	42·8	W
	7	0	20·03	518·7	42·4	780·4	43·5	W
	8	0	20·05	516·4	42·8	786·3	43·8	W
	9	0†	20·32	513·7	43·1	793·0	44·1	W
	10	0	18·20	516·8	43·5	789·3	44·5	W
	11	0	18·70	523·6	43·7	780·0	44·6	H
	12	0	19·17	518·6	43·8	770·9	44·6	H
	13	0	25 20·35	519·3	43·9	761·1	44·7	H
	14	0	19·48	517·4	44·0	760·4	44·8	H
	15	0	19·35	517·6	44·0	761·4	44·8	H
	16	0	19·32	519·0	44·0	762·5	44·7	H
	17	0	19·05	520·5	44·0	760·8	44·8	H
	18	0	18·23	521·3	44·1	762·6	44·6	H
	19	0	18·07	524·4	44·1	757·9	44·5	H
	20	0	18·18	522·9	43·9	759·7	44·1	H
	21	0	19·69	521·8	43·8	760·3	43·6	W
	22	0	20·74	519·4	43·4	763·5	43·2	W
	23	0	20·35	517·3	43·0	755·5	43·0	W
30	0	0	21·79	519·2	42·9	760·3	43·0	W
	1	0	20·72	515·7	42·8	770·4	43·0	W
	2	0	20·89	519·7	42·9	770·1	43·4	W
	3	0	20·18	521·9	43·0	770·9	43·7	W
	4	0	20·05	521·3	43·0	776·3	43·8	W

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
30	5	0	25 20·25	520·5	43·1	772·4	43·6	W
	6	0	21·27	517·2	43·0	774·9	43·4	H
	7	0†	13·46	522·1	42·9	785·5	43·4	H
	8	0	19·44	521·1	42·8	775·8	43·2	H
	9	0	19·26	518·3	42·6	776·9	42·7	H
	10	0	18·84	518·3	42·3	772·5	42·3	H
	11	0	18·74	518·6	42·0	767·8	41·7	B
	12	0†	15·44	529·6	41·8	747·0	41·2	B
	13	0†	25 14·85	518·2	41·4	744·7	41·0	B
	14	0	19·17	516·2	41·0	746·0	40·5	B
	15	0	19·05	516·9	40·7	747·8	40·0	B
	16	0	18·90	515·5	40·3	752·4	39·5	B
	17	0	20·18	517·1	39·9	747·8	38·9	B
	18	0	18·08	519·6	39·5	746·2	38·4	B
	19	0	17·29	521·6	39·0	749·8	38·0	B
	20	0	18·77	520·9	38·7	753·9	37·5	B
	21	0	19·39	517·6	38·3	754·2	37·2	H
	22	0	20·43	516·7	37·9	754·8	36·9	H
	23	0	21·48	516·5	37·6	752·7	36·8	H
31	0	0	23·14	517·3	37·3	760·3	36·8	W
	1	0	22·89	516·4	37·2	763·3	37·2	H
	2	0	22·47	518·8	37·2	768·4	37·4	H
	3	0	21·27	520·9	37·4	769·7	37·5	H
	4	0	20·11	521·4	37·4	770·9	37·7	H
	5	0	19·39	521·6	37·4	767·8	37·6	H
	6	0	19·41	522·8	37·5	766·3	37·2	B
	7	0	19·51	522·4	37·3	768·8	36·9	B
	8	0†	18·16	510·1	37·1	787·2	36·4	B
	9	0†	09·88	522·7	36·9	788·6	36·0	B
	10	0†	19·64	509·9	36·7	787·1	35·6	B
	11	0	19·31	521·6	36·3	775·6	35·4	W
	12	0	19·41	520·1	36·0	770·8	34·9	W
	13	0	25 18·90	521·4	35·6	764·3	34·4	W
	14	0	19·42	518·7	35·2	769·8	33·9	W
	15	0†	21·03	525·9	34·9	765·8	33·6	W
	16	0	19·14	523·5	34·7	758·1	33·5	W
	17	0	17·91	528·8	34·4	753·0	33·4	W
	18	0	17·15	522·6	34·1	754·5	33·2	W
	19	0	16·55	519·9	33·9	753·8	33·0	W
	20	0	19·62	522·1	33·7	749·5	32·6	W
	21	0	18·50	525·2	33·4	748·2	32·3	B
	22	0	20·53	527·8	33·1	746·8	32·0	B
	23	0	22·01	521·1	32·9	750·8	32·0	B
1	0	0	23·95	517·7	32·8	763·4	32·2	B
	1	0	26·25	516·2	32·8	769·2	33·1	H
	2	0	24·94	518·4	33·0	779·7	34·0	B
	3	0†	26·97	525·5	33·7	779·3	35·2	B
	4	0†	28·27	522·8	34·4	817·9	36·3	B
	5	0†	17·78	519·3	35·1	857·9	37·0	B
	6	0†	30·05	515·0	35·7	841·7	37·4	W
	7	0†	24·15	517·0	36·0	835·8	37·6	W
	8	0†	17·15	515·2	36·2	833·6	37·5	W
	9	0†	09·02	554·4	36·2	781·1	37·4	W
	10	0†	13·16	511·2	36·1	753·7	37·2	W
	11	0†	17·02	512·7	36·0	776·8	36·9	H
	12	0	17·87	512·2	35·9	777·7	36·7	H

DECLINATION. Torsion removed,—Jan. 27ᵈ 7ʰ, 0°. Effect of + 10° of Torsion = − 0′·84.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.
Jan. 26ᵈ 21ʰ—27ᵈ 7ʰ. The magnet with the short scale used in the declinometer; the readings of the declinometer have been corrected for the effect of the removal of the balance magnet.
Jan. 27ᵈ 0ʰ—11ʰ. Balance magnet removed for the purpose of determining its temperature correction by the method of deflections; its time of vibration in a horizontal plane was determined in the declinometer box between 27ᵈ, 8ʰ, and 9ʰ.
Jan. 31ᵈ 6ʰ. A thick cotton cover put over the bifilar instrument.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
1	13	0	25	18·74	515·0	35·8	776·5	36·4	H
	14	0		20·16	518·6	35·6	767·5	36·0	H
	15	0		18·82	516·8	35·4	768·0	35·7	H
	16	0		19·14	514·8	35·2	769·5	35·5	H
	17	0		19·19	516·0	35·0	764·9	35·0	H
	18	0†		16·65	518·4	34·8	765·5	35·0	H
	19	0†		16·35	516·4	34·8	772·1	35·0	H
	20	0		18·84	513·5	34·7	774·8	34·9	H
	21	0		18·28	520·5	34·6	761·8	34·6	W
	22	0		20·90	514·7	34·5	768·6	34·6	W
	23	0		20·63	519·2	34·4	760·9	34·6	W
2	0	0		21·85	513·6	34·3	770·2	34·7	W
	1	0		22·74	516·8	34·3	767·6	35·0	W
	2	0		22·67	520·1	34·3	766·1	35·2	W
	3	0		22·33	525·2	34·6	769·7	35·5	W
	4	0		22·22	532·3	34·9	770·5	35·7	W
	5	0†		22·65	516·4	35·0	778·1	36·0	B
	6	0†		15·41	504·9	35·1	827·2	36·0	H
	7	0†		20·40	514·7	35·2	823·5	36·4	H
	8	0†		22·87	520·0	35·4	800·7	36·6	H
	9	0		20·02	520·5	35·6	774·9	36·7	H
	10	0		19·37	520·8	35·6	769·1	36·5	H
	11	0†		17·49	517·1	35·8	763·9	36·5	B
	12	0†		17·54	481·8	35·7	670·1	36·4	B
	13	0†	25	11·00	513·6	35·7	719·6	36·5	B
	14	0†		19·01	510·1	35·7	715·6	36·5	B
	15	0†		13·52	502·4	35·7	728·4	36·5	B
	16	0†		17·44	506·9	35·7	735·4	36·4	B
	17	0†		17·08	505·1	35·7	717·7	36·2	B
	18	0†		21·21	522·8	35·5	703·5	36·0	B
	19	0†		19·55	525·0	35·4	704·2	36·0	B
	20	0		18·60	516·5	35·3	730·8	36·0	B
	21	0		19·58	519·3	35·3	736·3	35·7	H
	22	0		19·21	516·5	35·2	745·1	35·7	H
	23	0		20·13	511·3	35·2	770·3	36·0	H
3	0	0		20·89	513·0	35·3	777·2	36·3	H
	1	0		22·42	509·5	35·4	779·9	36·7	H
	2	0		21·86	516·2	35·8	777·6	37·5	H
	3	0		21·84	516·6	36·4	785·5	38·3	H
	4	0		20·15	522·5	36·9	780·7	38·8	H
	5	0		19·51	521·3	37·4	773·9	39·2	H
	6	0		18·92	524·3	37·9	759·5	39·1	B
	7	0†		22·18	522·6	37·9	772·9	38·9	B
	8	0†		12·13	527·8	37·9	776·0	38·5	B
	9	0		15·47	516·8	37·9	770·8	38·1	B
	10	0		18·16	516·7	37·4	773·3	37·5	B
	11	0†		13·61	517·6	37·0	772·9	36·9	W
	12	0†		12·20	532·6	36·8	743·4	36·5	W
4	13	0†	25	18·37	516·8	35·7	760·3	35·3	H
	14	0†		23·01	514·5	35·4	750·8	35·1	H
	15	0†		20·70	513·9	35·1	736·6	34·9	H
	16	0†		16·62	516·9	34·9	743·7	34·7	H
	17	0		19·05	517·1	34·7	751·4	34·3	H
	18	0†		17·56	520·9	34·4	747·8	34·0	H
	19	0†		18·43	520·9	34·2	754·5	33·8	H
	20	0		18·63	522·2	34·0	750·4	33·6	H
4	21	0	25	18·16	519·2	33·8	753·9	33·2	W
	22	0		17·96	518·2	33·5	756·9	33·0	W
	23	0		21·79	511·4	33·3	759·4	33·0	W
5	0	0		25·51	502·8	33·1	766·1	33·2	W
	1	0		25·68	505·7	33·2	765·8	33·7	B
	2	0		22·13	519·2	33·4	768·5	34·5	W
	3	0		25·76	523·8	33·9	788·0	35·5	W
	4	0		21·59	512·2	34·7	794·2	36·6	W
	5	0		21·41	525·3	35·4	800·4	37·3	W
	6	0		22·22	512·2	35·9	812·0	37·6	H
	7	0†		19·10	513·9	36·3	839·6	37·7	H
	8	0†		18·72	515·0	36·5	775·4	37·9	H
	9	0†		16·57	512·5	36·6	819·5	37·8	H
	10	0†		27·01	504·0	36·6	746·4	37·6	H
	11	0†		12·62	515·4	36·5	778·0	37·2	B
	12	0†		23·34	502·6	36·2	737·9	36·8	B
	13	0†	25	17·42	519·1	36·0	701·1	36·4	B
	14	0†		18·10	498·9	35·9	735·2	36·0	B
	15	0†		18·70	504·2	35·6	729·5	35·5	B
	16	0†		19·58	513·3	35·2	759·8	34·9	B
	17	0†		22·91	511·7	34·8	752·1	34·4	B
	18	0†		21·32	517·8	34·4	747·4	33·9	B
	19	0		18·79	519·3	34·0	752·4	33·3	B
	20	0		20·16	515·9	33·7	748·0	32·6	B
	21	0		19·84	510·1	33·2	758·3	31·9	H
	22	0		20·87	507·1	32·7	763·8	31·3	H
	23	0		23·99	504·9	32·3	765·0	31·2	H
6	0	0		24·93	501·3	32·0	777·8	31·5	H
	1	0		20·32	512·2	32·0	778·4	32·3	H
	2	0		22·44	515·8	32·2	779·9	33·5	H
	3	0		22·10	512·4	32·9	779·8	34·9	H
	4	0		20·45	519·1	33·9	780·7	36·4	H
	5	0		20·72	520·1	34·9	777·1	37·2	H
	6	0†		16·38	512·7	35·8	798·4	37·7	B
	7	0†		12·95	522·8	36·1	779·0	37·8	B
	8	0		19·58	520·8	36·3	763·1	37·6	B
	9	0		17·89	521·1	36·3	762·2	37·1	B
	10	0†		20·03	547·4	36·1	735·2	36·6	B
	11	0†		16·52	519·0	35·9	739·7	36·3	W
	12	0		17·42	518·7	35·7	744·0	36·0	W
	13	0†	25	19·39	516·8	35·4	751·5	35·5	W
	14	0†		18·81	515·4	35·1	737·7	35·2	W
	15	0		19·10	515·3	34·9	748·6	34·9	W
	16	0		16·79	513·4	34·7	754·4	34·4	W
	17	0		18·23	513·9	34·4	758·3	34·2	W
	18	0		17·68	516·6	34·1	760·9	33·9	W
	19	0		18·20	520·7	34·0	756·6	33·8	W
	20	0		19·46	518·2	33·9	754·7	33·8	W
	21	0		18·87	522·0	33·9	753·1	33·8	B
	22	0		19·88	517·7	33·8	753·2	34·0	B
	23	0		21·30	518·0	33·9	745·8	34·4	B
7	0	0		22·30	517·3	34·1	752·0	35·5	B
	1	0		22·87	517·8	34·7	751·6	36·3	B
	2	0		24·13	519·8	35·3	758·4	37·4	B
	3	0		24·52	524·8	35·9	762·9	38·2	B
	4	0		22·44	521·1	36·7	766·1	38·8	B

DECLINATION. Magnet untouched, Jan. 27ᵈ—Feb. 13ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, $k = 0{\cdot}000140$. BALANCE. Observed 3ᵐ after the Declination, $k = 0{\cdot}0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
7	5	0	25	22·87	519·0	37·1	774·2	39·0	B
	6	0†		17·22	515·9	37·4	783·8	39·0	W
	7	0†		18·68	522·1	37·6	787·0	38·8	W
	8	0†		20·85	520·5	37·5	771·5	38·5	W
	9	0†		09·89	500·7	37·3	785·8	38·2	W
	10	0†		01·31	506·0	37·1	736·5	38·0	W
	11	0†		13·41	502·0	37·0	746·8	37·8	H
	12	0†		08·08	506·8	36·9	745·0	37·6	H
	13	0†	25	14·57	511·0	36·8	738·9	37·3	H
	14	0		11·28	514·1	36·5	716·8	36·8	H
	15	0		19·78	511·0	36·3	739·6	36·4	H
	16	0		19·34	510·0	36·0	758·5	36·1	H
	17	0		19·84	513·2	35·8	767·8	35·7	H
	18	0		19·14	519·5	35·5	767·6	35·3	H
	19	0		18·77	520·7	35·3	765·0	35·0	H
	20	0		19·49	516·7	35·0	764·6	34·8	H
	21	0		21·21	518·2	34·9	752·9	34·5	W
	22	0		19·17	517·2	34·8	747·9	34·4	W
	23	0		24·69	520·5	34·7	748·0	35·0	W
8	0	0		24·89	514·6	34·8	751·2	35·9	W
	1	0		25·54	517·4	35·0	756·7	36·8	W
	2	0		25·53	519·4	35·8	752·2	37·5	W
	3	0		22·80	524·8	36·4	769·5	38·4	W
	4	0†		22·71	524·5	37·0	789·3	38·7	W
	5	0†		13·49	512·5	37·3	846·3	38·9	W
	6	0†		21·71	515·7	37·4	812·4	38·8	H
	7	0		19·46	508·8	37·4	817·8	38·5	H
	8	0		20·20	517·2	37·5	795·4	38·4	H
	9	0†		17·49	525·7	37·4	776·2	38·2	H
	10	0†		17·53	515·5	37·3	764·9	38·2	H
	11	0†		12·65	526·3	37·2	743·0	38·0	B
	12	0†		18·90	517·2	37·2	743·6	38·0	B
	13	0	25	18·88	519·0	37·1	748·8	37·7	B
	14	0†		26·52	528·1	37·0	723·2	37·4	B
	15	0†		18·85	521·9	36·9	694·4	37·3	B
	16	0†		18·13	513·6	36·9	724·9	37·3	B
	17	0		18·70	517·5	36·9	744·7	37·1	B
	18	0		18·16	520·2	36·8	747·9	37·0	B
	19	0		19·48	518·5	36·7	752·7	36·9	B
	20	0		19·21	518·1	36·6	755·4	36·7	B
	21	0		19·01	517·7	36·4	755·8	36·6	H
	22	0		18·95	514·3	36·4	761·3	36·7	H
	23	0		20·40	513·1	36·3	763·2	36·8	H
9	0	0		22·04	515·2	36·4	758·4	36·9	H
	1	0		22·60	516·0	36·5	759·0	37·3	H
	2	0		22·18	518·5	36·6	759·1	37·7	H
	3	0		21·24	520·0	36·9	763·2	38·4	H
	4	0		19·84	520·1	37·4	764·8	38·9	H
	5	0		19·44	519·8	37·8	763·7	39·3	H
	6	0		19·48	521·0	38·2	756·0	39·3	H
	7	0		19·55	521·2	38·2	753·6	39·2	B
	8	0		19·34	522·0	38·2	752·4	39·1	B
	9	0		18·75	521·5	38·2	750·9	38·9	B
	10	0		18·74	520·2	38·1	749·5	38·6	B
	11	0		18·81	520·1	38·0	751·0	38·4	W
	12	0		18·75	520·3	37·9	749·6	38·0	W

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
9	13	0	25	19·12	520·5	37·8	749·1	37·8	W
	14	0		18·34	518·6	37·6	751·0	37·5	W
	15	0		18·27	519·1	37·3	746·1	37·0	W
	16	0		18·47	518·4	37·0	742·7	36·6	W
	17	0		16·87	517·3	36·8	745·3	36·2	W
	18	0		17·19	522·3	36·5	745·3	35·8	W
	19	0		17·65	524·4	36·1	745·5	35·5	W
	20	0		18·87	523·7	35·9	748·1	35·1	W
	21	0		20·18	521·2	35·6	747·2	34·9	B
	22	0		20·65	515·8	35·3	750·6	34·5	B
	23	0		20·67	514·6	35·0	745·2	34·6	H
10	0	2		22·04	512·9	34·9	749·7	34·7	H
	1	0		21·59	513·5	34·9	756·4	35·1	H
	2	0		21·86	515·7	35·0	759 5	35·7	B
	3	0		21·56	520·5	35·3	766·3	36·6	B
	4	0		19·71	518·8	35·7	770·0	37·2	H
	5	0		20·09	522·8	36·1	767·9	37·5	B
	6	0		18·99	519·8	36·4	766·4	37·5	W
	7	0		18·47	521·2	36·6	765·5	37·5	W
	8	0		18·40	521·9	36·7	763·0	37·2	W
	9	0†		07·13	523·7	36·6	766·8	37·0	W
	10	0†		13·46	509·2	36·5	775·5	37·0	W
	11	0†		16·46	511·0	36·4	772·5	36·8	H
	12	0†		21·44	511·8	36·4	785·1	36·9	H
11	13	0†	25	14·68	516·0	35·6	741·3	34·8	B
	14	0†		17·46	513·3	35·1	747·4	34·4	B
	15	0		19·53	514·2	34·8	749·7	34·0	B
	16	0		17·40	515·4	34·4	745·3	33·5	B
	17	0†		17·29	519·2	34·0	746·6	33·1	B
	18	0		17·84	520·2	33·8	749·3	33·0	B
	19	0		18·27	521·0	33·5	750·9	32·8	H
	20	0		18·90	523·4	33·3	750·0	32·6	H
	21	0		19·24	520·5	33·1	748·7	32·6	W
	22	0		19·29	519·0	32·9	751·1	32·6	H
	23	0		22·13	519·9	32·9	755·0	33·0	H
12	0	0		21·04	516·0	32·9	754·6	33·5	H
	1	0		21·91	519·2	33·2	753·3	34·2	H
	2	0		21·73	520·9	33·5	752·2	34·7	B
	3	0		21·97	521·9	33·9	752·1	35·3	H
	4	0		20·06	519·2	34·4	755·0	35·8	B
	5	0		20·60	519·6	34·8	760·2	36·3	H
	6	0		19·28	520·6	35·1	764·5	36·5	B
	7	0		20·09	522·1	35·3	758·7	36·5	B
	8	0		19·76	520·4	35·5	758·5	36·5	B
	9	0		18·90	523·3	35·6	753·7	36·5	B
	10	0		18·88	522·1	35·7	753·3	36·4	B
	11	0		18·84	521·2	35·6	749·8	36·1	W
	12	0		18·82	521·6	35·5	749·0	35·9	W
	13	0	25	18·67	519·8	35·3	748·5	35·6	W
	14	0		18·85	519·5	35·1	746·9	35·3	W
	15	0		19·21	520·3	35·0	745·7	35·1	W
	16	0		18·94	521·4	34·9	743·8	34·9	W
	17	0		18·20	521·8	34·8	742·7	34·7	W
	18	0		17·70	523·4	34·6	740·6	34·5	W
	19	0		18·13	521·7	34·4	739·1	34·4	B
	20	0		18·84	522·7	34·3	738·9	34·4	B

DECLINATION. Magnet untouched, Jan. 27ᵈ—Feb. 13ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs. d.	h.	m.	DECLINATION. ° ′	BIFILAR. Corrected. Sc. Div.	BIFILAR. Thermometer. °	BALANCE. Corrected. Mic. Div.	BALANCE. Thermometer. °	Observer's Initial.
12	21	0	25 19·68	520·9	34·2	740·9	34·4	H
	22	0	20·15	518·0	34·1	746·4	34·3	B
	23	0	19·98	517·7	34·1	745·9	34·7	H
13	0	0	21·50	516·5	34·2	747·2	35·0	B
	1	0	22·20	519·0	34·4	744·3	35·6	H
	2	0	22·11	519·4	34·8	748·2	36·2	H
	3	0	20·92	522·1	35·2	749·5	36·6	H
	4	0	20·05	523·8	35·6	750·5	37·0	H
	5	0	19·26	520·5	36·0	745·8	37·3	H
	6	0	18·82	523·5	36·2	747·7	37·5	W
	7	0	19·51	523·8	36·5	748·2	37·5	W
	8	0	17·00	522·2	36·6	751·3	37·5	W
	9	0	19·53	523·8	36·7	748·3	37·5	W
	10	0	19·26	522·1	36·8	751·1	37·5	W
	11	0	17·42	522·6	36·8	754·6	37·5	H
	12	0	18·23	528·5	36·8	734·0	37·5	H
	13	0	25 18·79	522·7	36·8	737·2	37·7	H
	14	0	18·63	522·6	36·9	739·3	37·8	H
	15	0	18·55	522·7	37·0	742·2	37·9	H
	16	0	18·25	521·9	37·1	741·2	38·0	H
	17	0	18·34	522·0	37·2	743·7	38·3	H
	18	0	18·07	521·9	37·3	742·4	38·3	H
	19	0	18·27	522·4	37·5	740·8	38·3	W
	20	0	18·81	523·1	37·7	741·2	38·4	W
	21	0	18·94	523·5	37·9	737·9	38·5	B
	22	0	18·90	523·7	37·9	737·6	38·6	W
	23	0	19·12	522·7	37·9	735·8	38·9	W
14	0	0	19·95	522·6	38·0	735·5	39·1	W
	1	0	19·98	519·1	38·3	737·3	39·5	W
	2	3	20·85	522·0	38·6	737·5	39·7	W
	3	0	21·17	523·2	38·8	738·2	40·0	W
	4	0	19·66	520·7	39·0	743·0	40·5	W
	5	0	19·37	522·5	39·3	736·9	40·7	W
	6	0	19·37	523·2	39·6	738·6	41·2	H
	7	0	19·17	524·3	39·8	736·3	41·3	H
	8	0	18·79	524·8	40·0	735·0	41·5	H
	9	0	18·81	526·5	40·2	732·9	41·6	H
	10	0	18·81	525·7	40·5	731·3	41·8	H
	11	0	18·81	524·5	40·8	732·9	42·0	B
	12	0	18·47	524·5	41·0	731·8	42·3	B
	13	0	25 18·77	524·0	41·1	729·9	42·4	B
	14	0	19·40	525·0	41·2	726·4	42·5	B
	15	0	18·94	524·3	41·4	724·6	42·6	B
	16	0	18·80	524·0	41·6	722·7	42·7	B
	17	0	18·27	523·3	41·8	721·0	42·9	B
	18	0	18·34	521·3	41·9	720·5	43·1	B
	19	0	20·18	522·3	42·0	718·4	43·2	H
	20	0	18·94	526·6	42·1	708·1	43·4	H
	21	0	20·22	527·1	42·3	704·8	43·6	W
	22	0	20·96	525·4	42·5	707·4	43·7	H
	23	0	22·20	524·8	42·7	712·1	44·2	H
15	0	0	22·60	525·0	42·9	717·1	44·5	H
	1	0	24·06	524·6	43·1	716·2	44·8	H
	2	0	20·29	520·2	43·5	715·3	45·4	H
	3	0	20·82	526·9	44·0	712·6	45·9	H
	4	0	20·69	524·7	44·4	718·0	46·4	H
15	5	0	25 17·98	515·7	44·8	725·7	46·4	H
	6	0	20·67	520·9	45·1	727·2	46·3	H
	7	0	19·58	523·7	45·0	723·4	46·1	H
	8	0	19·48	520·9	44·9	727·3	45·6	B
	9	0	18·97	521·6	44·8	730·5	45·1	B
	10	0	15·54	516·0	44·4	742·9	44·7	B
	11	0	18·70	516·7	44·0	738·3	44·0	W
	12	0	18·68	518·9	43·7	733·7	43·5	W
	13	0	25 17·83	519·1	43·3	730·6	42·9	W
	14	0	18·67	516·0	42·9	733·4	42·4	W
	15	0	18·35	517·3	42·5	731·4	41·8	W
	16	0	18·18	517·6	42·1	731·1	41·3	W
	17	0	17·96	517·8	41·8	731·3	40·9	W
	18	0	18·21	519·1	41·4	731·1	40·5	W
	19	4	18·21	518·6	41·1	731·5	40·2	B
	20	0	18·79	518·3	40·9	731·1	40·1	B
	21	0	19·35	519·8	40·6	730·9	39·9	H
	22	0	20·06	519·5	40·4	731·3	39·6	B
	23	0	20·72	520·3	40·2	728·6	40·0	H
16	0	0	22·20	521·0	40·1	728·9	40·4	B
	1	0	22·06	522·3	40·2	730·4	41·1	H
	2	0	21·95	523·1	40·7	734·0	41·9	H
	3	0	22·20	522·8	41·2	736·1	42·8	H
	4	0	20·83	520·1	41·7	737·7	43·6	H
	5	0	20·97	523·1	42·4	728·3	44·2	H
	6	0	19·95	524·3	42·9	726·6	44·2	W
	7	0	19·59	524·5	43·0	725·6	44·1	W
	8	0	19·31	524·8	43·0	727·2	44·0	W
	9	0†	19·01	522·2	43·0	730·4	43·9	W
	10	0†	16·35	521·3	43·0	739·2	44·0	W
	11	0†	15·36	519·5	43·0	737·3	44·0	H
	12	0	15·38	517·3	43·0	729·6	43·9	H
	13	0	25 17·76	522·0	43·0	726·7	43·7	H
	14	0	18·16	522·3	43·0	725·1	43·5	H
	15	0	18·85	524·4	42·9	724·5	43·4	H
	16	0	16·59	522·8	42·9	726·4	43·3	H
	17	0	18·05	523·3	42·8	728·1	43·3	H
	18	0†	19·04	535·7	42·7	701·4	43·2	H
	19	0†	17·53	523·8	42·6	713·9	43·0	H
	20	0	17·49	528·9	42·6	713·8	43·0	H
	21	0	19·04	527·4	42·5	716·3	42·9	B
	22	0	20·36	524·3	42·3	714·1	42·6	W
	23	0	22·38	525·3	42·2	710·8	42·6	W
17	0	0	24·22	522·1	42·2	716·4	42·7	W
	1	0	25·31	526·7	42·2	720·4	43·0	W
	2	0	24·18	527·9	42·4	723·7	43·3	W
	3	0	23·47	524·7	42·6	724·9	43·5	W
	4	0	22·95	522·2	42·9	729·7	43·5	W
	5	0	22·50	524·7	42·9	732·4	43·5	W
	6	0	20·16	521·3	42·9	735·2	43·5	W
	7	0	19·82	519·0	42·9	737·6	43·5	W
	8	0	18·47	522·0	42·9	738·2	43·4	W
	9	0	17·53	523·4	42·8	739·0	43·2	H
	10	0†	12·13	542·0	42·7	713·8	43·0	H
	11	0†	18·72	523·7	42·7	723·5	43·1	B
	12	0†	15·66	519·3	42·6	706·7	43·2	B

DECLINATION. Torsion removed,—Feb. 13d 2h, + 2°. Effect of + 10° of Torsion = − 0′·84.

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·0000085.

† Extra Observations made.
Feb. 17d 0h—7h. Magnet with short scale used in the declinometer.
Feb. 17d 5h. Deflecting bar vibrated in the declinometer box.

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
18 13 0	25 18·07	525·2	42·8	726·2	43·2	W
14 0	18·03	521·7	42·7	726·1	43·1	W
15 0	18·90	522·2	42·6	726·5	43·0	W
16 0	17·65	522·2	42·5	727·6	42·9	W
17 0	18·27	523·7	42·4	726·6	42·8	W
18 0	17·49	523·8	42·3	723·5	42·6	W
19 0	18·16	524·0	42·2	721·1	42·5	H
20 0	18·32	523·6	42·1	718·6	42·5	H
21 0	18·86	523·0	42·1	722·6	42·3	B
22 0	18·85	523·6	42·0	723·8	42·2	H
23 0	20·65	522·2	41·9	720·8	41·9	H
19 0 0	20·85	522·5	41·7	724·0	41·7	H
1 0	20·42	526·5	41·6	724·5	41·5	H
2 0	20·29	528·1	41·4	728·8	41·4	H
3 0	18·67	523·2	41·2	728·0	41·0	W
4 0	18·81	524·1	41·0	731·1	40·8	W
5 0	18·58	521·3	40·9	731·3	40·6	H
6 0	18·94	521·4	40·7	730·5	40·3	W
7 0	17·87	519·9	40·4	730·0	39·9	W
8 0	17·74	522·5	40·1	730·2	39·5	W
9 0	18·05	522·4	39·9	726·0	39·0	W
10 0	17·83	521·4	39·6	726·3	38·5	W
11 0	18·07	521·1	39·2	725·3	38·0	B
12 0	18·10	520·9	38·8	727·0	37·4	B
13 0	25 18·08	520·6	38·3	729·1	36·8	B
14 0	18·18	520·4	37·8	732·4	36·3	B
15 0	18·00	519·2	37·3	733·7	35·6	B
16 0	17·53	520·7	36·9	736·1	35·0	B
17 0	17·84	519·9	36·4	739·7	34·5	B
18 0	17·46	522·5	36·0	740·6	34·3	B
19 0	17·46	522·4	35·6	740·9	34·0	W
20 0	17·60	522·0	35·1	735·9	33·6	W
21 0	18·28	521·7	34·9	738·3	33·4	H
22 0	18·40	519·3	34·6	728·7	33·2	W
23 0	19·39	519·7	34·3	719·1	33·3	W
20 0 0	21·07	522·9	34·2	719·7	33·7	H
1 0	20·72	524·9	34·2	729·8	34·5	H
2 0	20·92	525·2	34·5	......	......	W
3 0	20·94	526·2	34·9	735·5	36·0	W
4 0	20·25	526·1	35·4	738·8	36·9	W
5 0	19·48	525·2	36·0	751·7	37·5	W
6 0	18·90	523·6	36·7	735·6	37·6	B
7 0	18·84	526·2	36·9	732·7	37·6	B
8 0	17·56	525·0	37·0	734·6	37·4	B
9 0	18·13	525·5	36·8	727·6	36·9	B
10 0	17·93	526·3	36·6	729·6	36·5	B
11 0	16·18	523·4	36·3	730·1	35·9	H
12 0	18·01	524·5	35·9	729·2	35·4	H
						H
13 0	25 17·96	523·2	35·6	730·8	35·0	
14 0	17·36	521·7	35·2	734·1	34·5	H
15 0	17·56	521·8	34·9	739·7	34·2	H
16 0	17·53	520·5	34·5	739·2	33·7	H
17 0	17·93	522·8	34·2	737·1	33·3	H
18 0	18·10	524·1	33·9	737·8	33·2	H
19 0	17·76	524·5	33·7	734·8	33·0	B
20 0	17·93	523·8	33·4	735·4	32·9	B

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
20 21 0	25 17·74	522·9	33·1	731·3	32·5	W
22 0	18·50	519·6	33·0	730·8	32·4	B
23 0	19·51	515·7	32·9	731·6	32·4	W
21 0 0	21·97	515·5	32·9	725·5	32·6	B
1 0	20·27	519·8	32·9	729·5	33·3	W
2 0	22·92	522·8	33·0	735·3	33·9	B
3 0	22·80	524·8	33·5	736·9	34·9	B
4 0	21·46	525·4	34·1	735·2	35·7	B
5 0	20·11	523·9	34·8	736·2	36·1	B
6 0	20·42	524·1	35·1	736·9	36·3	H
7 0	20·18	525·0	35·1	734·6	36·0	H
8 0	19·14	522·5	35·1	733·5	35·5	H
9 0	18·57	523·2	35·0	736·0	35·2	H
10 0	17·96	524·1	34·8	732·2	34·6	H
11 0	17·63	524·1	34·5	727·9	33·8	W
12 0	17·36	521·6	34·0	729·4	33·2	W
13 0†	25 14·84	532·7	33·5	709·4	32·6	W
14 0†	14·78	517·9	33·0	723·4	32·2	W
15 0	16·16	517·5	32·7	727·1	31·7	W
16 0	16·75	518·3	32·3	731·4	31·0	W
17 0	16·72	519·0	31·9	732·9	30·5	W
18 0	16·99	519·9	31·4	731·4	29·7	W
19 0	18·07	519·7	30·9	719·1	28·9	H
20 0	18·84	520·8	30·4	727·5	28·4	H
21 0	18·87	521·6	29·9	724·6	27·9	B
22 0	19·19	523·8	29·4	724·3	27·5	H
23 0	19·69	518·8	29·1	724·9	27·6	H
22 0 0	20·40	518·7	28·9	729·8	28·1	H
1 0	21·53	520·5	28·8	726·6	29·1	H
2 0	22·87	524·4	29·2	732·3	30·4	H
3 0	22·10	522·6	30·0	738·1	31·9	H
4 0	20·92	524·3	30·9	743·0	33·2	H
5 0	20·20	526·8	31·8	747·2	34·2	H
6 0	20·16	525·5	32·6	746·0	34·4	W
7 0†	20·74	525·1	33·0	746·2	34·5	W
8 0†	18·72	515·2	33·3	752·4	34·6	W
9 0†	16·68	515·9	33·6	771·8	34·8	W
10 0	17·56	521·4	33·7	758·6	34·6	W
11 0	18·16	522·5	33·6	749·5	34·2	B
12 0	17·60	523·5	33·3	739·6	33·8	B
13 0	25 18·50	520·3	33·0	742·4	33·4	B
14 0	18·13	521·4	32·9	742·2	32·9	B
15 0	17·67	519·8	32·6	744·9	32·5	B
16 0	18·23	519·5	32·1	744·1	32·0	B
17 0	18·16	520·6	31·9	744·0	31·7	B
18 0	18·23	520·6	31·8	743·9	31·3	B
19 0	18·27	519·5	31·4	743·0	30·9	W
20 0	18·74	520·5	31·1	739·7	30·6	W
21 0	19·32	521·3	31·0	734·7	30·4	H
22 0	19·79	520·6	30·8	731·5	30·3	W
23 0	20·20	519·8	30·6	727·7	30·4	W
23 0 0	20·85	519·1	30·6	731·8	31·1	W
1 0	21·27	522·3	30·8	734·7	32·2	H
2 0	22·13	523·1	31·1	736·4	32·6	W
3 0	20·96	521·8	31·7	741·9	33·0	W
4 0	18·40	522·0	32·0	748·8	33·4	W

DECLINATION. Torsion removed,—Feb. 23^{d} 3^{h}, + 1½°. Effect of + 10° of Torsion = − 0′·84.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
23	5	0	25	17·86	523·0	32·3	748·2	33·5	B
	6	0		17·89	523·7	32·5	744·0	33·6	B
	7	0		18·13	525·4	32·5	741·7	33·4	H
	8	0		18·16	524·9	32·7	742·5	33·4	H
	9	0		17·53	522·8	32·7	743·5	33·4	H
	10	0		15·96	520·1	32·7	761·8	34·5	B
	11	0		15·12	523·7	32·9	752·6	34·3	B
	12	0		16·05	523·3	33·0	739·6	34·6	B
	13	0	25	16·32	521·0	33·4	740·0	35·0	D
	14	0		16·82	523·6	33·7	737·1	35·0	D
	15	0		16·55	519·6	34·0	743·0	35·5	D
	16	0		16·80	522·3	34·2	743·7	36·0	D
	17	0		17·09	523·1	34·5	741·3	36·4	H
	18	0		17·36	523·6	34·9	740·9	36·5	H
	19	0		17·49	523·4	35·0	739·0	36·5	H
	20	0		18·23	522·9	35·1	735·7	36·5	H
	21	0		18·57	524·6	35·2	739·7	36·5	H
	22	0		19·31	526·9	35·1	734·1	36·4	W
	23	0		20·45	527·0	35·1	733·6	36·5	W
24	0	0		20·89	526·3	35·2	734·7	36·8	W
	1	0		20·60	527·2	35·6	734·7	37·1	W
	2	0		20·49	528·4	35·9	734·2	37·5	B
	3	0		19·44	527·7	36·1	733·3	37·7	B
	4	0		18·99	525·3	36·4	744·0	38·0	D
	5	0		19·34	521·1	36·6	742·1	38·0	D
	6	0		19·24	524·3	36·7	734·5	37·4	H
	7	0		18·65	528·3	36·7	734·3	37·4	H
	8	0		18·21	527·4	36·7	740·7	37·6	W
	9	0		17·70	526·3	36·7	738·2	37·5	W
	10	0		17·63	527·2	36·6	737·7	37·5	W
	11	0		16·90	524·3	36·5	737·8	37·0	W
	12	0		16·95	524·1	36·1	736·0	36·5	W
25	13	0	25	17·09	523·2	33·2	741·7	33·3	H
	14	0		18·00	524·0	33·1	739·8	33·0	H
	15	0		17·31	523·9	33·0	740·0	32·6	H
	16	0		17·42	523·2	32·9	740·8	32·4	H
	17	0		16·95	523·9	32·7	741·6	32·3	H
	18	0		16·87	523·7	32·5	744·6	32·4	H
	19	0		16·38	523·8	32·5	742·5	32·4	W
	20	0		16·92	523·2	32·4	742·1	32·6	W
	21	0		16·89	522·3	32·4	739·6	32·8	B
	22	0		17·46	520·0	32·5	736·5	32·9	W
	23	0		19·64	519·2	32·7	730·4	33·3	W
26	0	0		21·63	518·9	32·9	731·3	33·7	W
	1	0		23·07	521·2	33·0	738·6	34·0	W
	2	0		24·08	521·5	33·2	743·6	34·5	W
	3	0		22·53	526·0	33·8	747·1	35·0	W
	4	0		19·91	523·5	34·0	745·7	35·3	W
	5	0		18·23	525·6	34·3	751·8	35·3	W
	6	0		18·74	524·4	34·2	745·3	35·0	W
	7	0		17·98	527·6	34·2	743·7	34·5	H
	8	0		17·98	527·0	34·0	742·5	34·0	H
	9	0		17·96	525·5	33·9	743·3	33·6	H
	10	0		17·51	525·2	33·5	745·4	33·3	H
	11	0		16·73	524·6	33·2	745·8	32·9	B
	12	0		17·09	523·4	33·0	745·1	32·4	B

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
26	13	0	25	17·39	523·8	32·8	744·4	32·0	B
	14	0		17·42	523·8	32·5	742·2	31·6	B
	15	0		16·68	521·5	32·1	742·8	31·1	B
	16	0		16·12	520·8	31·8	741·0	30·5	B
	17	0		16·55	518·1	31·3	742·3	29·9	B
	18	0		16·18	521·5	30·9	732·6	29·3	B
	19	0		16·86	520·0	30·3	732·2	28·6	H
	20	0		16·82	522·9	29·9	730·5	28·2	H
	21	0		17·49	521·1	29·5	731·5	27·9	W
	22	0		18·70	519·6	29·2	725·6	28·0	H
	23	0		19·93	515·3	29·0	742·2	28·3	H
27	0	0		21·76	520·4	28·9	733·3	29·2	H
	1	0		23·39	519·5	29·2	741·9	30·0	H
	2	0		21·66	520·7	29·9	751·0	31·5	H
	3	0		20·77	523·4	30·9	754·1	33·2	H
	4	0		18·85	524·1	31·7	751·2	34·3	H
	5	0		17·60	523·9	32·8	753·9	35·2	H
	6	0		17·49	524·9	33·8	745·4	35·7	B
	7	0		17·49	525·1	34·1	742·2	35·7	B
	8	0		17·29	525·5	34·3	743·4	35·8	B
	9	0		17·48	526·3	34·6	740·7	35·7	B
	10	0		17·49	525·9	34·6	740·5	35·5	B
	11	0		17·36	525·4	34·6	743·4	35·4	W
	12	0		17·33	524·8	34·6	744·6	35·3	W
	13	0	25	16·82	524·4	34·5	743·4	35·1	W
	14	0		17·40	524·5	34·4	743·5	35·0	W
	15	0		17·34	524·9	34·3	740·6	34·9	W
	16	0		17·31	524·2	34·1	741·6	34·7	W
	17	0		16·35	524·6	34·0	741·9	34·6	W
	18	0		16·82	525·4	34·0	739·5	34·4	W
	19	0		16·15	524·7	34·0	739·1	34·2	B
	20	0		16·80	524·1	33·9	736·9	34·0	B
	21	0		16·50	523·0	33·7	740·9	34·0	H
	22	0		17·27	518·9	33·8	740·0	34·4	B
	23	0		19·51	518·4	33·8	736·7	34·9	H
28	0	0		20·99	521·6	34·1	735·3	35·4	B
	1	0		22·06	521·6	34·6	740·7	36·0	B
	2	0		22·20	525·3	35·0	745·7	36·9	H
	3	0		20·85	527·1	35·5	746·3	37·5	H
	4	0		18·84	525·9	36·0	752·7	38·0	W
	5	0		17·98	535·3	36·9	751·2	38·3	B
	6	0		18·75	533·1	36·7	746·3	38·5	W
	7	0†		20·30	518·5	37·0	764·9	38·3	W
	8	0†		06·51	500·7	37·1	813·6	38·5	W
	9	0†		13·32	505·3	37·4	800·0	38·7	W
	10	0†		08·70	507·1	37·6	765·4	38·8	W
	11	0†		03·99	491·2	37·7	741·3	38·9	H
	12	0†		13·16	514·0	37·8	743·7	38·9	H
	13	0†	25	16·86	518·6	37·9	761·6	39·0	H
	14	0†		14·92	512·6	37·9	759·1	39·1	H
	15	0†		15·81	504·9	37·9	756·7	39·0	H
	16	0†		20·08	520·4	37·9	667·4	39·0	H
	17	0†		03·21	505·1	37·9	641·6	39·0	H
	18	0†		12·65	527·6	37·9	664·5	39·2	H
	19	0†		17·31	513·9	37·9	695·5	39·0	W
	20	0†		15·81	518·9	37·9	717·7	38·8	W

DECLINATION. Magnet untouched, Feb. 23ᵈ—March 22ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, $k=0·000140$. BALANCE. Observed 3ᵐ after the Declination, $k=0·0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs. d.	h.	m.	Declination °	′	Bifilar. Corrected. Sc. Div.	Bifilar. Thermometer. °	Balance. Corrected. Mic. Div.	Balance. Thermometer. °	Observer's Initial.
28	21	0	25	15·64	521·2	37·9	724·2	38·6	B
	22	0		17·00	513·5	37·9	735·1	38·5	W
	23	0		20·52	509·6	37·9	739·7	38·6	W
29	0	0		22·27	510·6	37·9	752·3	39·1	W
	1	0		22·04	516·7	38·0	752·4	39·6	W
	2	0		21·76	522·9	38·5	751·9	40·1	W
	3	0		20·79	526·3	38·9	748·8	40·5	W
	4	0		19·07	525·9	39·2	753·8	40·9	W
	5	0		18·00	525·3	39·6	754·7	41·0	W
	6	0		18·40	527·2	39·9	762·1	41·0	W
	7	0		17·83	511·3	39·9	778·9	40·9	H
	8	0		18·16	519·5	39·9	777·4	40·8	H
	9	0		18·60	521·1	39·9	766·9	40·5	H
	10	0†		13·23	535·2	39·8	753·7	40·3	H
	11	0†		15·49	516·3	39·6	740·5	40·3	B
	12	0†		16·15	517·8	39·5	753·5	40·3	B
	13	0	25	16·55	516·8	39·4	756·2	40·2	B
	14	0		17·37	516·4	39·2	753·1	39·9	B
	15	0†		15·01	515·0	39·2	753·8	39·6	B
	16	0		15·54	515·5	39·1	752·2	39·5	B
	17	0		16·72	514·4	39·0	741·1	39·5	B
	18	0		15·51	519·6	39·0	739·1	39·3	B
	19	0		16·99	520·3	38·9	744·7	39·2	H
	20	0		16·79	518·7	38·9	752·4	39·2	H
	21	0		17·09	518·1	38·9	756·2	39·0	W
	22	0		17·36	515·5	38·8	758·9	39·3	H
	23	0		18·72	515·8	38·8	750·4	39·7	H
1	0	0		20·22	517·3	39·0	747·8	40·5	H
	1	0		21·01	521·6	39·4	744·6	41·3	H
	2	0		20·33	524·6	40·0	745·1	42·3	H
	3	0		19·78	527·9	40·8	742·6	43·2	H
	4	0		19·04	527·4	41·4	742·1	43·7	W
	5	0		18·81	529·6	42·0	754·2	44·1	B
	6	0		19·10	518·9	42·4	763·8	44·2	B
	7	0		18·87	521·5	42·6	760·8	44·0	B
	8	0		19·51	523·6	42·7	758·4	43·7	B
	9	0		18·72	525·3	42·5	756·4	43·3	B
	10	0†		16·06	519·7	42·2	769·3	43·0	B
	11	0†		16·08	523·9	42·0	768·8	42·8	W
	12	0		14·96	521·2	42·0	763·5	42·5	W
	13	0	25	15·14	517·2	41·9	766·8	42·0	W
	14	0		15·88	519·8	41·6	762·5	41·5	W
	15	0		15·51	518·7	41·1	761·9	41·0	W
	16	0		14·80	520·3	40·9	755·6	40·5	W
	17	0		16·80	521·0	40·5	753·0	40·0	W
	18	0		16·89	522·5	40·1	753·0	39·6	W
	19	0†		16·05	521·5	39·9	754·0	39·2	B
	20	0†		15·31	525·2	39·8	749·6	39·0	B
	21	0		16·80	512·2	39·4	750·1	38·9	H
	22	0		19·37	515·9	39·1	740·4	38·8	B
	23	0		19·34	516·8	39·1	735·2	39·2	H
2	0	0		22·18	521·9	39·1	739·2	39·9	H
	1	0		21·93	516·7	39·4	740·6	40·6	H
	2	0†		26·27	531·8	39·8	744·7	41·5	H
	3	0†		24·22	519·4	40·2	750·5	42·3	H
	4	0		21·79	522·2	40·8	746·7	42·9	H

Göttingen Mean Time of Declination Obs. d.	h.	m.	Declination °	′	Bifilar. Corrected. Sc. Div.	Bifilar. Thermometer. °	Balance. Corrected. Mic. Div.	Balance. Thermometer. °	Observer's Initial.
2	5	0	25	20·85	528·4	41·2	754·5	43·2	H
	6	0		20·22	523·7	41·8	754·8	43·0	W
	7	0		20·38	523·3	41·9	753·5	42·9	W
	8	0†		19·79	524·8	41·8	761·2	42·5	W
	9	0†		07·94	515·0	41·7	774·3	42·2	W
	10	0†		06·03	509·6	41·5	584·4	42·0	W
	11	0†		21·12	497·0	41·3	497·0	41·8	H
	12	0†		08·85	543·4	41·0	581·8?	41·8	H
3	13	0†	25	24·15	515·1	40·3	616·0	40·5	B
	14	0†		12·11	512·5	40·1	606·7	40·6	B
	15	0†		10·77	512·9	40·1	662·9	40·7	B
	16	0†		13·39	512·6	40·0	688·8	40·4	B
	17	0†		15·41	517·0	40·0	697·8	40·0	B
	18	0†		14·43	520·1	39·8	704·6	39·6	B
	19	0		16·55	517·6	39·5	713·5	39·2	H
	20	0†		17·04	509·8	39·2	718·9	38·9	H
	21	0†		22·62	511·9	39·0	727·9	38·5	W
	22	0		18·13	518·1	38·8	733·8	38·7	H
	23	0		18·79	515·3	38·8	731·2	39·0	H
4	0	0		23·79	520·1	38·8	727·0	39·4	H
	1	0		22·98	515·8	38·9	732·3	39·6	H
	2	0		23·61	524·9	39·0	745·0	39·8	H
	3	0†		20·43	513·1	39·0	781·5	40·0	H
	4	0†		20·40	522·6	39·1	785·7	39·9	H
	5	0†		17·53	530·7	39·1	794·3	39·9	H
	6	0†		17·96	525·2	39·1	775·0	39·5	B
	7	0†	25	06·48	503·4	39·0	882·3	39·3	B
	8	0†	24	59·51	533·8	39·0	757·5	39·2	H
	9	0†	25	12·08	515·5	38·9	748·7	39·1	B
	10	0†		25·60	523·8	38·9	655·8	38·9	B
	11	0†		19·82	507·0	38·7	629·3	38·5	B
	12	0†		16·12	517·3	38·4	711·7	38·4	B
	13	0	25	16·80	517·0	38·1	730·6	37·9	W
	14	0†		22·13	512·3	37·9	677·1	37·2	W
	15	0†		17·33	511·9	37·6	634·7	36·8	W
	16	0†		21·10	505·2	37·1	688·1	36·5	W
	17	0†		18·94	515·0	36·9	686·9	36·1	W
	18	0		16·48	512·6	36·6	713·7	35·5	W
	19	0†		16·32	518·0	36·1	715·9	35·0	B
	20	0†		18·65	509·5	35·9	722·2	34·5	B
	21	0†		21·16	512·0	35·3	729·7	34·0	H
	22	0†		19·98	512·8	34·9	732·2	33·9	B
	23	0†		19·64	517·1	34·8	742·2	34·0	B
5	0	0†		21·59	500·2	34·7	763·9	34·6	B
	1	0†		22·40	510·8	34·7	762·6	35·6	H
	2	0†		27·14	524·8	35·1	778·0	36·3	H
	3	0†		17·22	521·0	35·7	823·0	37·1	B
	4	0†		19·58	527·1	36·1	796·6	37·8	B
	5	0†		19·22	524·1	36·7	777·7	38·3	B
	6	0†		15·31	509·5	37·0	785·9	38·6	W
	7	0†		04·34	519·9	37·4	775·7	38·5	W
	8	0†		05·69	527·9	37·7	767·9	38·7	W
	9	0†		14·84	525·2	37·8	738·9	38·8	W
	10	0†		09·98	512·1	37·9	717·2	38·9	W
	11	0†		16·36	474·7	37·9	563·3	38·9	H
	12	0†		07·65	517·0	37·7	608·8	38·5	H

DECLINATION. Magnet untouched, Feb. 23ᵈ—March 22ᵈ.
BIFILAR. Observed 2ᵐ after the Declination, $k=0·000140$. BALANCE. Observed 3ᵐ after the Declination, $k=0·0000085$.

† Extra Observations made.
March 2ᵈ 11ʰ. The observation of the declination was taken 18ˢ after the time.
March 2ᵈ 12ʰ. The reading of the balance magnetometer at 12ʰ 3ᵐ was lost, the reading given has been interpolated between observations at 11ʰ 58ᵐ and 12ʰ 6ᵐ.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
5	13	0†	25	16·28	499·2	37·5	581·0	38·4	H
	14	0†		03·00	497·1	37·3	571·6	38·2	H
	15	0†		13·37	502·9	37·2	581·3	38·0	H
	16	0†		13·02	484·5	37·1	579·9	37·7	H
	17	0†		26·16	498·7	37·0	549·6	37·2	H
	18	0†		13·43	520·8	36·8	606·2	36·9	H
	19	0†		16·80	517·9	36·5	678·9	36·4	W
	20	0		16·38	516·2	36·1	709·8	35·8	W
	21	0		16·03	517·1	35·9	720·8	35·4	B
	22	0		18·60	512·7	35·7	731·2	35·2	W
	23	0†		19·46	503·0	35·4	737·9	35·5	W
6	0	0†		23·78	497·9	35·3	745·0	36·0	W
	1	0†		23·99	507·9	35·7	771·0	36·7	B
	2	0†		27·07	523·3	36·0	775·5	37·5	W
	3	0†		18·88	513·3	36·5	872·8	38·1	B
	4	0†		25·41	530·6	37·0	846·3	38·9	W
	5	0†		10·67	530·5	37·5	848·3	39·2	B
	6	0†		20·94	515·2	37·8	804·6	39·5	H
	7	0†		19·35	517·3	37·9	787·9	39·2	H
	8	0		18·00	514·7	37·9	762·6	39·0	H
	9	0†		15·71	519·0	37·8	759·1	38·6	H
	10	0		17·10	519·5	37·8	743·1	38·5	H
	11	0†		16·19	520·8	37·8	743·4	38·1	B
	12	0†		08·80	511·3	37·5	738·7	38·0	B
	13	0†	25	12·06	523·4	37·3	701·5	37·9	B
	14	0†		14·87	513·8	37·2	721·8	37·8	B
	15	0†		19·10	517·5	37·1	733·3	37·5	B
	16	0†		17·12	513·0	37·0	717·0	37·1	B
	17	0†		27·79	485·1	36·9	620·0	36·8	B
	18	0†		28·40	498·3	36·7	611·4	36·7	B
	19	0†		25·14	516·5	36·5	601·0	36·7	H
	20	0†		17·74	519·9	36·4	668·7	36·6	H
	21	0†		16·75	513·9	36·2	707·5	36·4	W
	22	0†		18·20	507·3	36·0	729·0	36·4	W
	23	0†		19·55	504·6	36·0	742·4	36·5	H
7	0	0†		20·96	508·4	36·1	750·0	36·9	H
	1	0†		21·03	514·9	36·2	745·2	37·4	H
	2	0		25·19	509·9	36·6	762·8	38·0	H
	3	0†		18·47	528·2	37·1	813·1	38·8	H
	4	0†		16·28	521·1	37·6	850·8	39·5	H
	5	0†		18·77	529·5	38·1	846·7	40·0	W
	6	0†		01·11	559·2	38·6	841·2	40·4	B
	7	0†		09·51	508·0	38·9	844·0	40·5	B
	8	0†		14·85	507·6	39·0	834·6	40·7	B
	9	0†		21·95	508·0	39·1	710·3	40·5	B
	10	0†		15·07	514·7	39·4	740·7	40·2	B
	11	0†		22·31	514·7	39·0	601·1	39·7	W
	12	0†		06·21	519·6	38·9	605·7	39·3	W
	13	0†	25	07·35	496·2	38·7	649·4	38·9	W
	14	0†		18·68	512·3	38·4	660·2	38·5	W
	15	0†		32·62	489·7	38·0	582·6	38·3	W
	16	0†		17·60	491·5	37·9	547·9	38·0	W
	17	0†		11·32	518·6	37·8	626·0	37·9	W
	18	0†		18·08	503·2	37·7	666·0	37·7	W
	19	0†		22·24	517·6	37·6	695·6	37·7	B
	20	0†		24·59	523·8	37·4	699·0	37·6	B
7	21	0†	25	20·72	496·9	37·2	731·0	37·4	H
	22	0†		21·06	508·7	37·1	740·3	37·3	B
	23	0†		18·23	509·5	37·0	745·9	37·3	H
8	0	0		20·90	513·5	37·0	747·3	37·5	B
	1	0		22·44	520·9	37·0	747·8	37·5	H
	2	0		24·53	523·8	37·0	752·8	37·5	H
	3	0		22·50	516·4	37·0	762·6	37·5	B
	4	0		22·06	524·7	37·0	774·8	37·5	H
	5	0†		20·49	526·6	37·0	783·8	37·4	B
	6	0†		18·27	526·7	37·0	801·2	37·5	W
	7	0†		05·40	516·8	37·0	831·6	37·7	W
	8	0†		11·21	519·9	37·2	804·1	38·2	W
	9	0†		14·13	518·1	37·5	791·6	38·4	W
	10	0†		19·86	520·6	37·7	691·9	38·5	W
	11	0†		11·52	513·7	37·9	707·0	38·9	H
	12	0†		14·13	516·8	38·0	713·2	39·2	H
	13	0†	25	15·36	513·6	38·2	726·8	39·6	H
	14	0†		28·50	493·4	38·5	667·0	40·3	H
	15	0†		19·64	516·4	39·0	644·2	41·0	H
	16	0†		15·51	517·6	39·3	710·7	41·5	H
	17	0†		17·76	516·9	39·8	729·8	41·9	H
	18	0		17·24	517·5	40·3	740·7	42·3	H
	19	0		18·99	520·6	40·8	745·3	42·6	W
	20	0		17·06	518·0	41·0	751·7	42·8	W
	21	0†		17·49	515·9	41·4	756·5	43·0	B
	22	0		18·07	510·2	41·7	759·2	43·5	W
	23	0		19·82	508·0	42·0	747·9	44·0	W
9	0	0		21·77	514·4	42·4	747·3	44·3	W
	1	0		22·94	518·4	42·7	737·6	44·5	W
	2	0		22·50	517·3	43·0	747·3	45·0	W
	3	0		20·85	520·6	43·4	758·4	45·5	W
	4	0		19·78	524·0	43·8	771·8	46·0	W
	5	0		19·76	518·8	44·3	780·4	46·3	W
	6	0†		13·46	525·5	44·7	799·2	46·6	H
	7	0		15·54	525·9	45·0	793·0	46·7	H
	8	0		17·56	524·5	45·1	768·5	46·4	H
	9	0†		05·35	535·0	45·0	760·1	45·9	H
	10	0†		10·11	529·7	45·0	733·3	45·6	H
	11	0†		14·06	517·3	44·9	728·6	45·5	B
	12	0†		16·32	508·0	44·8	734·8	45·2	B
10	13	0	25	16·73	518·9	43·7	725·9	43·6	W
	14	0		16·79	518·3	43·5	732·1	43·5	W
	15	0		17·29	515·5	43·3	732·5	43·4	W
	16	0		17·37	513·4	43·1	739·3	43·4	W
	17	0†		14·04	515·7	43·0	741·4	43·4	W
	18	0		17·42	519·8	43·0	746·1	43·4	W
	19	0		16·01	520·3	43·0	745·7	43·3	B
	20	0		16·95	517·7	43·0	752·7	43·3	B
	21	0		18·34	516·3	43·0	751·5	43·3	H
	22	0		18·13	510·0	43·0	745·5	43·2	H
	23	0		19·44	513·3	43·0	746·0	43·6	H
11	0	0		21·51	510·1	43·0	740·6	44·0	H
	1	0		24·22	515·4	43·3	745·5	44·5	H
	2	0		22·58	515·0	43·6	748·7	45·0	H
	3	0		21·59	521·7	44·0	750·9	45·3	H
	4	0		20·16	523·1	44·3	752·0	45·7	H

DECLINATION. Magnet untouched, Feb. 23d—March 22d.

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0·0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
11	5	0	25	18·81	522·5	44·7	752·7	46·0	H
	6	0		18·10	524·1	44·9	748·8	45·8	W
	7	0		17·15	523·3	44·9	747·0	45·4	W
	8	0		17·61	522·5	44·8	746·8	44·8	W
	9	0		17·96	526·4	44·3	743·3	44·0	W
	10	0†		14·73	517·4	43·9	741·7	43·5	W
	11	0†		15·11	512·1	43·5	757·7	42·9	H
	12	0		15·47	519·5	43·2	746·1	42·3	H
	13	0	25	16·93	512·6	42·7	749·2	41·7	H
	14	0		17·58	516·8	42·2	745·7	41·1	H
	15	0		17·61	517·3	41·8	745·9	40·5	H
	16	0		16·45	516·8	41·3	746·0	40·0	H
	17	0		16·32	518·4	41·0	748·7	39·5	H
	18	0		16·43	518·3	40·5	750·7	38·9	H
	19	0		16·80	519·0	40·0	750·9	38·4	W
	20	0		16·62	516·9	39·6	758·3	38·0	W
	21	0		16·66	515·3	39·2	764·5	37·9	B
	22	0		16·97	511·1	39·0	761·4	37·8	W
	23	0		19·59	507·7	38·9	754·3	38·0	W
12	0	0		22·17	509·6	38·8	753·8	38·3	W
	1	0		24·24	507·9	38·9	756·9	38·6	B
	2	0		25·33	517·1	38·9	763·2	39·0	W
	3	0		25·16	517·4	38·9	769·6	39·6	W
	4	0		22·75	523·2	39·2	773·0	40·1	W
	5	0		18·34	522·4	39·6	800·2	40·5	W
	6	0		19·12	522·3	39·9	794·6	41·0	H
	7	0		18·84	519·4	40·1	788·7	41·0	H
	8	0		18·05	520·3	40·1	778·1	40·6	H
	9	0		17·42	519·8	40·1	772·2	40·3	H
	10	0		15·96	521·0	40·0	773·2	40·0	H
	11	0†		19·46	532·3	39·9	736·0	39·6	B
	12	0†		14·06	520·7	39·7	711·8	39·2	B
	13	0†	25	14·40	510·9	39·4	723·7	38·9	B
	14	0		14·18	517·7	39·0	718·6	38·5	B
	15	0		14·06	513·7	38·8	741·5	37·9	B
	16	0		15·38	515·4	38·4	746·6	37·4	B
	17	0		15·51	516·6	38·0	731·1	37·0	B
	18	0		14·67	520·3	37·7	742·2	36·6	B
	19	0		14·96	521·1	37·4	747·4	36·2	H
	20	0		15·01	518·9	37·0	756·0	35·8	H
	21	0		14·80	516·9	36·7	760·1	35·5	W
	22	0		16·32	515·9	36·4	756·8	35·6	H
	23	0		18·16	512·5	36·3	755·4	36·1	H
13	0	0		20·49	517·6	36·3	750·0	36·7	H
	1	0		21·83	518·7	36·7	747·1	37·7	H
	2	0		23·54	524·8	37·2	750·4	38·6	H
	3	0		21·53	523·4	37·8	757·2	39·4	H
	4	0		20·74	524·7	38·2	761·5	40·0	H
	5	0		19·10	525·6	38·7	766·0	40·2	H
	6	0		15·51	522·5	39·0	775·3	40·3	B
	7	0		18·16	527·5	39·1	762·7	40·2	B
	8	0		18·20	527·1	39·1	755·4	40·0	B
	9	0		17·96	529·5	39·1	751·5	39·7	B
	10	0		17·89	526·3	39·0	755·2	39·5	B
	11	0		17·53	528·3	38·9	755·5	39·3	W
	12	0		17·46	527·3	38·8	754·0	39·0	W

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
13	13	0	25	17·04	524·2	38·6	754·9	38·8	W
	14	0		16·89	522·7	38·4	754·7	38·5	W
	15	0		16·86	524·6	38·2	752·1	38·3	W
	16	0		16·89	525·1	38·0	751·4	38·0	W
	17	0		17·27	524·5	37·9	751·8	37·8	W
	18	0		16·86	523·5	37·8	752·0	37·5	W
	19	0		16·63	524·4	37·6	750·6	37·1	B
	20	0		16·70	522·8	37·3	755·1	36·7	B
	21	0		15·62	519·6	37·0	756·8	36·3	H
	22	0		17·31	513·5	36·9	758·7	36·5	B
	23	0		19·88	509·9	36·7	757·2	36·8	H
14	0	0		20·87	515·8	36·9	750·3	37·8	B
	1	0		22·53	517·1	37·3	747·9	39·2	H
	2	0		22·13	522·9	38·1	753·6	40·7	B
	3	0		21·56	522·6	39·0	754·6	42·0	H
	4	0		20·05	522·4	40·0	751·1	43·0	H
	5	0		18·85	524·5	40·9	754·2	43·5	B
	6	0		18·37	523·6	41·6	752·7	43·6	W
	7	0		18·27	526·0	41·9	749·7	43·5	W
	8	0		18·14	527·7	41·9	747·6	43·3	W
	9	0		18·65	531·1	41·9	745·3	43·0	W
	10	0		18·03	529·5	41·8	747·5	42·6	W
	11	0		17·29	524·4	41·5	755·0	42·2	H
	12	0		16·93	526·2	41·2	752·2	41·8	H
	13	0	25	17·39	525·8	41·0	747·9	41·5	H
	14	0		17·34	526·8	40·8	745·9	41·2	H
	15	0		16·19	525·4	40·6	743·9	40·9	H
	16	0		15·34	523·0	40·4	746·4	40·5	H
	17	0		16·35	522·2	40·2	746·6	40·2	H
	18	0		16·23	523·9	40·0	746·9	39·8	H
	19	0		16·16	525·3	39·8	746·4	39·4	W
	20	0		16·15	523·5	39·5	747·4	39·0	W
	21	0		16·87	523·3	39·2	744·6	38·7	B
	22	0		15·83	517·7	39·0	747·4	38·5	W
	23	0		17·87	517·1	38·9	735·4	38·4	W
15	0	0		20·74	517·4	38·7	739·4	38·4	W
	1	0		22·42	516·1	38·7	750·3	38·4	W
	2	0		24·10	520·0	38·6	748·6	38·4	W
	3	0		21·32	521·2	38·5	751·5	38·5	W
	4	0		20·23	522·8	38·5	755·5	38·6	W
	5	0		18·84	523·3	38·5	758·7	38·5	W
	6	0		18·10	524·0	38·4	757·6	38·3	H
	7	0		18·16	523·1	38·3	752·6	38·0	H
	8	0		17·83	525·0	38·1	753·4	37·8	H
	9	0		17·61	526·3	37·9	752·4	37·6	H
	10	0		17·63	525·4	37·8	754·4	37·4	H
	11	0		17·46	525·6	37·8	754·8	37·3	B
	12	0		17·09	526·2	37 6	751·2	37·2	B
	13	0	25	18·00	526·2	37·3	752·1	37·0	B
	14	0		18·07	524·2	37·1	753·6	36·8	B
	15	0		17·47	523·3	37·0	754·4	36·6	B
	16	0		17·46	524·0	36·9	753·5	36·5	B
	17	0		17·19	523·9	36·8	751·9	36·3	B
	18	0		17·34	523·1	36·6	751·2	36·1	B
	19	0		16·95	523·8	36·4	752·0	35·9	H
	20	0		16·23	521·9	36·2	756·6	35·7	H

Declination. Magnet untouched, Feb. 23ᵈ—March 22ᵈ.

Bifilar. Observed 2ᵐ after the Declination, k=0·000140. Balance. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
15	21	0	25	15·17	518·2	36·0	763·3	35·6	W
	22	0		15·49	513·9	35·9	765·6	35·6	H
	23	0		17·17	512·0	35·9	760·6	36·5	H
16	0	0		21·73	515·6	36·2	754·7	37·5	H
	1	0		22·40	515·8	36·6	752·4	38·2	H
	2	0		24·39	519·5	37·1	750·7	38·6	H
	3	0		23·11	517·5	37·5	754·4	38·9	H
	4	0		20·18	519·4	37·9	761·4	39·0	H
	5	0		18·90	522·5	38·0	762·9	39·0	H
	6	0		17·51	522·9	38·0	757·9	38·5	B
	7	0		17·12	525·8	37·9	753·4	38·1	B
	8	0		17·26	526·1	37·8	749·8	37·7	B
	9	0		16·79	524·8	37·5	755·4	37·4	B
	10	0		17·02	523·2	37·2	754·7	37·0	B
	11	0		16·82	523·8	37·0	754·8	36·7	W
	12	0		17·27	523·6	36·8	753·6	36·4	W
17	13	0	25	16·82	525·5	38·6	742·9	37·5	W
	14	0		16·93	524·8	38·0	743·2	36·7	W
	15	0		16·79	524·7	37·4	741·1	35·8	W
	16	0		16·77	522·5	36·9	735·0	35·1	W
	17	0†		19·34	519·1	36·3	734·2	34·3	W
	18	0		15·91	524·4	35·7	723·0	33·6	W
	19	0		16·72	524·5	35·1	723·4	33·0	H
	20	0		15·04	522·7	34·5	733·5	32·4	H
	21	0		13·69	519·0	33·9	739·3	31·9	B
	22	0		14·17	514·6	33·5	738·9	31·9	H
	23	0		17·94	508·8	33·3	744·9	32·3	H
18	0	0		21·90	511·1	33·2	733·5	33·3	H
	1	0		24·42	511·8	33·4	718·9	34·2	H
	2	0		26·65	521·3	33·9	722·1	35·2	H
	3	0		25·40	522·7	34·6	733·2	36·6	H
	4	0		23·38	526·6	35·5	737·1	37·6	H
	5	0		21·34	529·7	36·3	741·7	38·4	H
	6	0		20·53	531·0	37·0	750·1	38·9	W
	7	0		19·51	527·2	37·6	748·6	39·1	W
	8	0		19·42	529·5	37·9	750·2	39·2	W
	9	0†		11·22	519·7	37·9	767·2	39·3	W
	10	0†		12·93	523·3	38·0	759·1	39·4	W
	11	0†		09·59	518·3	38·2	740·8	39·6	B
	12	0†		13·44	524·7	38·4	738·6	39·8	B
	13	0	25	15·98	512·9	38·6	735·5	39·6	B
	14	0		17·56	524·0	38·6	735·1	39·4	B
	15	0		15·56	524·2	38·4	734·8	39·1	B
	16	0		16·32	525·3	38·2	727·8	38·9	B
	17	0†		11·41	520·9	38·1	724·9	38·6	B
	18	0†		14·06	528·9	38·0	720·1	38·5	B
	19	0		14·80	523·0	38·0	721·4	38·3	W
	20	0		16·89	521·8	37·9	719·0	38·1	W
	21	0		15·05	516·1	37·8	729·5	38·2	H
	22	0†		16·36	497·1	37·7	732·7	38·4	W
	23	0†		26·94	491·6	37·9	729·3	39·4	W
19	0	0†		20·11	513·4	38·4	719·9	40·6	H
	1	0		22·13	513·4	39·2	722·8	42·0	H
	2	0		24·30	516·6	40·1	731·4	43·2	W
	3	0		22·94	518·4	41·0	739·4	44·4	W
	4	0		21·73	521·7	41·9	744·2	44·9	W
19	5	0	25	21·12	527·4	42·6	753·0	45·2	W
	6	0		18·84	523·8	43·0	754·3	45·3	B
	7	0		17·06	525·7	43·1	754·9	45·2	B
	8	0†		10·09	518·4	43·2	770·4	45·0	B
	9	0†		17·15	542·7	43·2	734·0	44·8	B
	10	0†		15·32	521·7	43·3	745·6	44·8	B
	11	0		15·56	525·7	43·2	740·8	44·6	H
	12	0		16·95	524·9	43·1	742·0	44·5	H
	13	0	25	15·76	522·3	43·0	746·6	44·3	H
	14	0		17·71	522·6	43·0	744·6	44·1	H
	15	0		16·82	522·8	43·0	741·7	44·0	H
	16	0		16·82	520·6	43·0	742·6	44·0	H
	17	0†		19·93	517·2	43·0	735·9	43·9	H
	18	0		17·02	517·8	43·0	720·1	43·8	H
	19	25		17·84	525·4	43·1	709·8	43·7	B
	20	0		17·17	525·8	43·0	712·4	43·6	B
	21	0		16·12	519·8	42·9	722·7	43·5	W
	22	0		17·33	519·7	42·9	723·3	43·3	B
	23	0		17·09	513·8	42·8	723·6	43·1	W
20	0	0		19·34	514·3	42·8	726·8	43·1	B
	1	0		21·59	512·9	42·7	718·3	43·0	B
	2	0		22·91	517·4	42·6	719·3	42·8	W
	3	0		21·79	521·9	42·5	726·6	42·9	B
	4	0		20·02	524·2	42·5	734·7	43·0	W
	5	0		18·84	527·9	42·6	745·0	43·1	B
	6	0		17·46	526·1	42·7	746·2	43·1	W
	7	0		16·98	526·8	42·7	743·9	42·9	H
	8	0		17·15	528·8	42·5	742·3	42·5	H
	9	0		16·75	525·7	42·3	745·1	42·0	H
	10	0		13·70	523·0	42·0	744·8	41·5	B
	11	0		14·41	528·6	41·8	728·2	41·3	B
	12	0		13·59	525·6	41·5	718·8	41·1	B
	13	0	25	18·05	525·9	41·3	720·9	40·8	D
	14	0		16·75	522·0	41·0	724·3	40·5	D
	15	0		16·32	521·9	40·7	724·2	40·2	D
	16	0		16·30	523·5	40·4	720·8	39·8	D
	17	0		16·18	523·2	40·1	725·3	39·4	W
	18	0		17·58	521·8	39·8	722·3	38·9	W
	19	0		17·44	524·0	39·4	717·8	38·3	W
	20	0		15·51	520·4	39·0	722·4	37·7	W
	21	0		14·46	515·1	38·6	726·2	37·4	B
	22	0		16·99	512·0	38·1	724·7	37·3	B
	23	0		19·10	515·0	38·0	719·8	37·9	W
21	0	0		21·73	514·3	38·0	724·5	38·6	B
	1	0		23·24	515·7	38·3	727·1	39·9	B
	2	0		23·25	521·1	39·1	727·2	41·3	H
	3	0		22·17	523·4	40·0	730·6	42·7	H
	4	0		21·56	528·1	40·9	728·3	43·7	H
	5	0		19·78	525·9	41·7	740·9	44·1	B
	6	0		18·01	525·1	42·1	758·1	44·3	B
	7	0		16·97	525·2	42·4	756·3	44·4	D
	8	0		17·63	527·7	42·6	744·6	44·5	D
	9	0		17·47	529·0	42·9	745·2	44·6	W
	10	0		16·80	525·7	42·9	747·8	44·4	W
	11	0		14·77	522·9	42·9	717·5	44·0	W
	12	0		15·62	526·1	42·8	723·4	43·6	B

DECLINATION. Magnet untouched, Feb. 23d—March 22d.

BIFILAR. Observed 2m after the Declination, $k=0{\cdot}000140$. BALANCE. Observed 3m after the Declination, $k=0{\cdot}0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
21	13	0	25	17·40	524·4	42·6	732·2	43·3	B
	14	0		17·04	524·4	42·3	736·4	43·0	B
	15	0		16·82	523·9	42·0	737·3	42·6	B
	16	0		17·26	524·5	41·9	736·6	42·3	B
	17	0		17·42	524·3	41·9	738·4	42·1	B
	18	0		15·98	526·0	41·7	737·1	41·9	B
	19	0		15·54	527·1	41·5	737·4	41·7	W
	20	0		15·42	521·1	41·2	742·2	41·5	W
	21	0		15·41	518·6	41·1	741·2	41·6	H
	22	0		17·68	516·5	41·1	742·5	41·8	W
	23	0		20·08	514·6	41·2	742·3	42·4	W
22	0	0		22·18	508·8	41·5	744·4	42·9	W
	1	0		23·52	513·9	41·8	740·7	43·2	H
	2	0		24·87	519·3	42·1	737·9	43·5	W
	3	0		24·52	526·6	42·5	741·2	44·0	W
	4	0		22·03	522·3	42·9	747·0	44·5	H
	5	0		20·32	525·4	43·3	746·3	45·0	W
	6	0		19·04	526·7	43·8	740·9	45·4	B
	7	0		18·77	528·4	44·1	737·8	45·6	B
	8	0		18·25	530·0	44·3	737·7	45·6	B
	9	0†		15·56	523·9	44·6	735·5	45·6	B
	10	0†		16·01	520·2	44·7	750·8	45·6	B
	11	0		12·83	526·2	44·6	734·3	45·5	H
	12	0		16·79	525·3	44·6	738·0	45·4	H
	13	0	25	16·73	525·7	44·6	734·6	45·2	H
	14	0		16·75	524·9	44·3	735·3	44·9	H
	15	0		16·15	523·3	44·0	738·3	44·6	H
	16	0		17·40	522·9	43·9	739·1	44·2	H
	17	0		17·37	523·6	43·7	734·7	43·9	H
	18	0		16·89	524·0	43·5	732·8	43·5	H
	19	0		16·08	525·5	43·3	736·0	43·2	B
	20	0		15·02	524·6	43·1	739·3	43·0	B
	21	0		14·80	520·1	42·9	741·5	42·8	W
	22	0		15·74	515·0	42·8	743·7	42·6	B
	23	0		18·14	512·6	42·7	736·4	43·0	W
23	0	0		23·85?	507·5	42·7	734·1	43·5	W
	1	0		23·17	511·6	42·9	731·8	43·9	B
	2	0		24·33	515·0	43·1	735·1	44·5	W
	3	0		23·15	519·4	43·5	739·9	45·0	W
	4	0		22·27	522·1	43·9	751·0	45·4	W
	5	0		19·62	521·7	44·3	754·6	45·7	W
	6	0		18·16	526·8	44·7	752·5	46·0	H
	7	0		18·03	530·7	44·9	743·8	46·1	H
	8	0		17·71	527·8	44·9	738·8	45·8	H
	9	0		17·20	528·7	44·9	735·9	45·5	H
	10	0		17·07	526·9	44·9	734·3	45·3	H
	11	0		16·84	527·3	44·8	736·7	45·0	W
	12	0		16·68	525·0	44·6	739·1	44·7	W
24	13	0	25	16·79	524·3	43·3	730·6	42·9	B
	14	0		16·35	524·6	43·1	733·0	42·6	B
	15	0		16·93	523·8	42·9	736·4	42·3	B
	16	0		16·86	524·0	42·6	737·3	42·0	B
	17	0		16·36	523·6	42·3	739·6	41·7	B
	18	0		16·75	523·8	42·1	739·5	41·6	B
	19	0		16·82	524·3	42·0	738·7	41·6	H
	20	0		15·44	525·5	41·8	738·6	41·5	H
24	21	4	25	14·17	520·7	41·7	739·2	41·4	W
	22	0		15·47	515·0	41·6	735·9	41·5	H
	23	0		17·96	515·2	41·5	730·3	41·6	H
25	0	0		20·05	512·5	41·5	729·1	41·9	H
	1	0		21·91	517·1	41·7	724·5	42·3	H
	2	0		23·34	522·8	41·9	725·5	42·8	H
	3	0		24·08	530·6	42·1	730·8	43·2	H
	4	0		22·82	531·0	42·4	742·1	43·6	H
	5	0		18·90	526·2	42·7	750·2	44·0	H
	6	0		19·04	524·4	43·0	752·7	44·2	B
	7	0		18·74	530·9	43·2	756·5	44·3	B
	8	0		18·82	523·2	43·5	755·5	44·3	B
	9	0		16·73	525·0	43·6	754·7	44·3	B
	10	0		17·89	525·5	43·6	747·4	44·2	B
	11	0		17·02	525·9	43·6	743·0	44·2	W
	12	0		17·15	526·4	43·5	737·7	44·0	W
	13	0	25	17·47	526·2	43·5	736·4	44·0	W
	14	4		15·61	527·1	43·5	726·8	44·0	W
	15	0		15·98	524·9	43·4	731·4	44·0	W
	16	0		16·05	523·5	43·3	733·6	43·7	W
	17	0		16·18	525·5	43·1	731·2	43·4	W
	18	0		16·12	525·3	43·0	732·1	43·1	W
	19	0		16·08	524·4	42·9	736·3	42·8	B
	20	5		14·87	523·0	42·7	741·3	42·5	B
	21	5		14·43	519·0	42·5	749·9	42·4	H
	22	0		15·71	516·3	42·4	738·4	42·6	B
	23	0		18·77	512·3	42·4	735·7	43·5	H
26	0	0		21·53	511·9	42·8	728·8	44·4	H
	1	0		22·87	515·8	43·3	721·4	45·4	H
	2	0		22·87	524·2	44·1	722·6	46·6	H
	3	0		21·63	527·8	45·1	725·0	47·7	B
	4	0		19·49	526·8	46·1	727·5	48·9	B
	5	0		18·14	528·1	46·9	743·8	49·6	B
	6	0		17·58	528·1	47·8	748·2	50·0	W
	7	0		17·76	527·9	48·0	744·5	50·0	W
	8	0		18·20	528·2	48·2	739·5	49·8	W
	9	0		18·10	528·5	48·3	737·6	49·6	W
	10	0		18·16	529·3	48·3	736·0	49·5	W
	11	0		18·16	530·7	48·2	733·0	49·4	H
	12	0		17·49	530·0	48·1	734·2	49·2	H
	13	0	25	14·40	528·6	48·0	733·2	49·1	H
	14	0		15·91	527·7	48·0	734·4	49·0	H
	15	0		16·57	527·1	48·0	733·8	48·9	H
	16	0		16·15	526·8	48·0	735·0	48·8	H
	17	0		15·64	526·9	47·9	734·3	48·7	H
	18	0		16·13	525·7	47·9	736·6	48·6	H
	19	0		15·64	525·5	47·9	739·7	48·5	W
	20	0		14·60	523·8	47·9	743·7	48·5	W
	21	0		13·64	521·7	47·9	743·7	48·5	B
	22	0		14·73	518·5	47·9	737·9	48·7	W
	23	0		16·16	515·6	48·0	727·4	49·0	W
27	0	0		18·55	517·6	48·3	719·6	49·5	W
	1	0		20·92	519·3	48·9	715·9	50·5	W
	2	0		21·59	523·8	49·6	712·1	51·5	W
	3	0		21·71	531·9	50·3	726·7	52·5	W
	4	0		20·42	527·5	51·0	742·8	53·7	W

DECLINATION. Torsion removed,—March 22d 23h, 0°—27d 4h, + 3°, + 9½°* Effect of + 10° of Torsion = − 0′·84.
BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0 0000085.

† Extra Observations made.
March 23d 0h—4h. Magnet with short scale used in the declinometer.
March 25d 6h—10h. The magnets seemed to be very slightly disturbed.
* March 27d 4h +. After removing the torsion from the declinometer thread, the thread, which it was found had stretched a little, was wound up 0·2 inch, and the torsion again removed.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
27	5	0	25	19·84	525·1	51·9	741·1	54·5	W
	6	0		16·16	529·2	52·3	756·7	54·6	H
	7	0		14·71	524·4	52·7	793·7	54·5	H
	8	0		19·56	527·4	52·8	772·4	54·2	H
	9	0		19·56	527·5	52·8	768·4	53·8	H
	10	0		17·42	522·7	52·6	775·6	53·0	W
	11	0		18·10	526·0	52·2	762·8	52·3	B
	12	0		16·89	525·2	51·8	754·1	51·6	B
	13	0†	25	10·70	539·4	51·4	684·0	50·8	B
	14	0†		12·98	518·5	51·0	689·9	50·2	B
	15	0		14·70	519·3	50·5	720·2	49·5	B
	16	0		15·44	519·0	50·0	736·7	48·9	B
	17	0		15·44	520·4	49·5	738·9	48·1	B
	18	0		15·85	519·1	49·0	736·1	47·3	B
	19	0		16·63	518·7	48·5	735·6	46·6	H
	20	0		15·85	515·5	47·9	737·7	45·9	H
	21	0		17·10	514·8	47·3	739·2	45·5	W
	22	0		18·84	511·9	46·9	741·7	45·4	H
	23	0		21·93	509·6	46·7	730·6	46·0	H
28	0	0		24·93	510·9	46·6	732·1	46·7	H
	1	0		25·56	509·7	46·9	737·7	48·0	H
	2	0		25·63	523·8	47·5	739·7	49·3	H
	3	0		24·86	516·0	48·2	749·7	50·3	H
	4	0		21·03	527·7	49·1	748·7	51·5	H
	5	0		20·29	534·7	50·0	740·0	52·5	H
	6	0		19·51	536·3	50·9	743·3	53·0	B
	7	0		16·35	526·6	51·6	764·1	53·0	B
	8	0†		15·51	524·5	51·8	773·5	52·5	B
	9	0†		18·08	530·9	51·7	764·0	52·0	B
	10	0		18·11	528·1	51·3	753·4	51·4	B
	11	0		18·16	528·0	50·9	751·1	50·6	W
	12	0		18·23	526·4	50·4	747·1	50·0	W
	13	0	25	18·10	526·6	50·0	746·3	49·5	W
	14	0		18·05	525·0	49·6	747·2	48·9	W
	15	0		17·06	525·0	49·2	748·0	48·5	W
	16	0		16·38	524·4	48·9	747·6	48·2	W
	17	0		16·35	527·1	48·6	746·6	48·0	W
	18	0		16·33	523·5	48·3	748·4	47·7	W
	19	0		16·21	523·6	48·1	742·2	47·5	B
	20	0		15·88	518·6	48·0	739·6	47·3	B
	21	0		17·87	508·2	47·9	737·7	47·5	H
	22	0		18·60	501·7	47·9	737·4	47·9	B
	23	0		25·81	504·5	47·9	741·2	48·6	H
29	0	0		22·15	516·2	48·2	731·9	49·3	B
	1	0		22·85	514·0	48·8	733·0	50·6	H
	2	0		23·92	510·4	49·8	728·9	52·2	B
	3	0		24·22	523·3	50·8	727·9	53·5	B
	4	0		22·51	516·2	51·8	732·2	54·8	H
	5	0		20·30	521·3	52·8	733·7	55·6	W
	6	0		19·17	527·0	53·7	745·1	56·3	W
	7	0		19·07	528·3	54·3	742·7	56·5	W
	8	0†		18·21	540·6	54·8	739·0	56·4	W
	9	0†		17·46	533·2	54·9	748·9	56·1	W
	10	0†	25	26·23	457·6	54·8	679·1	55·5	W
	11	0†	24	52·13	476·7	54·4	652·8	55·1	H
	12	0†	25	00·53	475·0	54·0	619·0	54·5	H
29	13	0†	24	53·27	489·7	53·7	379·4	54·0	B
	14	0†	25	07·40	387·6	53·2	397·7	53·0	B
	15	0†		18·38	414·1	52·8	308·3	52·4	H
	16	0†		03·50	506·5	52·3	379·4	51·5	B
	17	0†		10·77	515·8	51·8	552·3	50·5	H
	18	0†		12·46	427·5	51·3	397·7	49·6	H
	19	0†		21·88	504·6	50·7	418·5	48·7	W
	20	0†		22·42	498·1	49·9	575·0	47·8	W
	21	0†		22·78	490·5	49·3	646·8	47·2	W
	22	0†		28·55	488·7	48·8	671·8	47·0	W
	23	0†		26·63	493·9	48·3	702·5	47·0	W
30	0	0†		28·82	500·7	48·1	808·4	47·7	W
	1	0†		30·69	503·9	48·3	799·1	49·0	W
	2	0†		25·51	520·7	48·9	857·8	50·5	W
	3	0†		28·18	514·3	49·9	809·1	52·5	W
	4	0†		16·97	531·7	51·0	825·7	54·0	W
	5	0†	25	24·66	517·9	52·3	756·8	55·5	W
	6	0†	24	51·16	530·1	53·3	748·3	56·4	H
	7	0†	25	02·55	523·0	54·2	813·2	56·9	H
	8	0†		29·93	545·6	54·9	723·8	56·8	H
	9	0†		05·13	532·9	55·0	660·1	57·0	H
	10	0†		12·82	507·5	55·1	664·2	56·7	B
	11	0†		20·16	518·3	55·0	576·0	56·5	W
	12	0†		14·87	520·8	54·9	651·6	55·8	B
31	13	0†	25	21·88	514·6	52·2	609·9	51·5	W
	14	0†		17·98	515·9	51·9	684·3	51·0	W
	15	0		16·75	516·1	51·4	719·4	50·5	W
	16	0		16·26	514·7	50·9	724·4	49·7	W
	17	0		17·54	514·5	50·4	716·8	49·0	W
	18	0†		22·87	503·3	49·9	675·1	48·0	W
	19	0†		19·55	524·5	49·3	666·4	47·3	B
	20	0†		17·10	514·6	48·7	706·3	46·6	B
	21	0		15·74	509·5	48·1	729·3	46·2	H
	22	0		17·42	505·5	47·7	744·8	46·1	B
	23	0		19·04	508·9	47·4	743·4	46·6	H
1	0	0		22·17	495·6	47·5	755·9	47·7	B
	1	0		22·06	509·6	47·9	755·3	49·3	H
	2	0		24·28	517·3	48·9	762·7	50·9	B
	3	0		17·81	511·5	49·9	788·0	52·5	B
	4	0†		21·81	516·8	51·0	785·4	54·0	B
	5	0†		15·04	516·1	52·0	780·3	54·8	B
	6	0†		12·87	529·6	52·9	810·9	55·4	W
	7	0†		16·35	520·9	53·4	805·9	55·4	W
	8	0†		19·19	526·2	53·7	781·5	55·0	W
	9	0†		12·92	514·1	53·8	782·0	54·8	W
	10	0†		19·55	501·0	53·6	692·9	54·5	W
	11	0†		12·67	516·0	53·3	710·7	54·2	H
	12	0†		15·76	514·6	53·0	710·6	53·5	H
	13	0	25	18·84	520·4	52·7	671·9	52·9	H
	14	0		17·20	516·2	52·4	673·0	52·2	H
	15	0†		21·50	507·5	52·1	594·9	51·5	H
	16	0†		13·46	516·5	51·8	649·9	51·2	H
	17	0		16·39	514·5	51·4	663·7	50·8	H
	18	0		16·46	519·8	51·1	653·4	50·5	H
	19	0		16·55	519·6	50·9	666·9	50·0	W
	20	0		18·23	508·8	50·6	697·9	49·8	W

DECLINATION. Magnet untouched, March 27d—April 5d.

BIFILAR. Observed 2m after the Declination, $k=0·000140$. BALANCE. Observed 3m after the Declination, $k=0·0000085$.

† Extra Observations made.

March 27d 5h. The declination was not observed till 5h 5m.

March 29d 14h. The reading of the declination has been interpolated between observations made at 13h 59m and 14h 2m. The observation of the balance was taken at 14h 4m.

March 30d 2h. The reading of the bifilar taken at 2h 3m.

March 30h 9m. The reading of the declination taken at 8h 59m.

Göttingen Mean Time of Declination Obs. d.	h.	m.	DECLINATION. ° ′	BIFILAR. Corrected. Sc. Div.	BIFILAR. Thermometer. °	BALANCE. Corrected. Mic. Div.	BALANCE. Thermometer. °	Observer's Initial.
1	21	0	25 20·11	507·6	50·3	706·5	49·5	B
	22	0†	21·23	494·6	50·0	726·8	49·5	W
	23	0	23·76	500·8	49·9	724·1	49·5	W
2	0	0	24·84	506·9	49·9	725·5	49·8	B
	1	0	25·58	513·7	49·9	728·9	50·0	W
	2	0	26·35	519·7	50·0	738·0	50·5	W
	3	0	27·44	530·2	50·1	750·7	50·9	W
	4	0	23·43	518·4	50·5	767·9	51·2	W
	5	0	22·24	522·1	50·7	780·0	51·0	W
	6	0†	18·85	503·8	50·7	824·7	51·0	H
	7	0†	18·25	526·4	50·7	796·4	50·9	H
	8	0†	16·08	520·7	50·6	792·7	50·8	H
	9	0†	29·68	515·6	50·4	742·9	50·7	H
	10	0†	13·96	523·3	50·4	743·9	50·7	H
	11	0†	16·35	524·0	50·4	747·5	50·7	B
	12	0	18·40	520·9	50·3	744·7	50·5	B
	13	0	25 19·07	520·2	50·2	741·0	50·2	B
	14	0	18·18	521·6	50·0	740·8	49·9	B
	15	0	16·13	515·7	49·9	738·0	49·6	B
	16	0†	21·29	509·5	49·7	728·1	49·4	B
	17	0†	17·58	519·7	49·5	680·1	49·3	B
	18	0†	12·38	515·3	49·3	702·5	49·2	B
	19	0	14·85	517·5	49·1	721·3	49·0	H
	20	0	19·12	512·8	49·0	727·8	48·7	H
	21	0†	19·88	492·1	48·8	746·7	48·4	W
	22	0†	27·05	490·8	48·7	746·2	48·5	H
	23	0†	24·13	503·9	48·6	743·0	49·0	H
3	0	0	20·94	520·1	48·7	738·7	49·2	H
	1	0	22·89	516·9	48·8	727·9	49·6	H
	2	0	24·89	515·9	48·9	731·8	49·9	H
	3	0	25·42	523·4	49·1	743·8	50·1	H
	4	0	25·00	517·8	49·3	784·8	50·4	H
	5	0†	23·51	527·6	49·5	827·7	50·4	H
	6	0†	12·35	550·4	49·7	851·1	50·3	B
	7	0†	13·66	511·4	49·8	818·6	50·1	B
	8	0†	14·23	515·3	49·7	784·0	49·9	B
	9	0†	17·53	519·3	49·5	757·1	49·5	B
	10	0	18·45	521·1	49·2	753·4	49·1	B
	11	0	15·78	529·4	49·0	730·1	48·7	W
	12	0†	13·63	513·0	48·7	713·7	48·3	W
	13	0	25 17·63	517·7	48·4	713·5	48·0	W
	14	0	15·04	511·6	48·0	723·7	47·5	W
	15	0	21·06	514·1	47·9	716·3	47·2	W
	16	0†	24·25	510·6	47·7	676·2	46·9	W
	17	0†	13·94	517·0	47·3	665·2	46·7	W
	18	0	14·46	518·1	47·0	691·8	46·3	W
	19	0	15·56	516·5	46·9	716·2	45·9	B
	20	0	14·57	511·0	46·5	734·1	45·5	B
	21	0	16·05	505·0	46·1	743·5	45·2	H
	22	0	19·86	500·5	45·8	749·4	45·0	H
	23	0	22·11	498·9	45·6	752·8	44·9	H
4	0	0	24·86	504·6	45·4	753·6	45·1	H
	1	0	25·56	514·8	45·4	758·6	45·2	H
	2	0	26·20	513·9	45·4	759·6	45·4	H
	3	0	25·49	522·6	45·4	764·5	45·7	W
	4	0	20·11	520·4	45·6	778·0	46·0	B
4	5	0	25 19·14	525·5	45·8	783·9	46·3	W
	6	0	19·34	525·4	46·0	776·9	46·5	W
	7	0†	17·63	517·0	46·0	776·8	46·6	W
	8	0	14·60	524·2	46·1	773·5	46·6	W
	9	0	16·52	522·6	46·1	766·2	46·5	W
	10	0	15·34	524·7	46·1	757·7	46·3	W
	11	0	14·13	522·4	46·0	746·5	46·1	H
	12	0	14·58	524·5	45·9	718·0	46·0	H
	13	0	25 15·45	520·1	45·8	726·2	45·6	H
	14	0	14·62	520·7	45·5	729·1	45·2	H
	15	0	14·75	518·7	45·2	721·3	44·8	H
	16	0	11·39	517·9	44·9	721·5	44·5	H
	17	0	12·92	520·5	44·6	725·5	44·2	H
	18	0	12·85	520·7	44·3	725·7	43·9	H
	19	0	14·26	521·3	44·0	729·1	43·4	W
	20	0	14·87	519·9	43·8	733·1	43·0	W
	21	0	15·27	518·4	43·6	735·5	43·0	B
	22	0	16·82	512·9	43·4	735·8	43·0	W
	23	0	18·74	512·0	43·2	739·5	43·3	W
5	0	0	22·00	516·9	43·2	736·7	43·6	W
	1	0	25·70	529·4	43·4	730·8	44·2	B
	2	0	26·67	525·3	43·7	737·3	44·8	W
	3	0	26·27	526·0	44·0	751·1	45·3	W
	4	0	24·22	527·0	44·5	751·7	45·5	W
	5	0	22·38	528·6	44·8	754·4	45·5	W
	6	0	19·95	523·8	44·8	761·4	45·6	H
	7	0	19·19	526·9	44·8	763·3	45·6	H
	8	0	18·32	527·7	44·8	760·6	45·5	H
	9	0	18·08	528·1	44·8	754·6	45·2	H
	10	0	17·71	528·5	44·7	753·6	44·9	H
	11	0	17·54	528·1	44·4	753·6	44·2	B
	12	0†	13·16	528·2	44·1	747·5	43·6	B
	13	0†	25 34·12	517·2	43·8	583·9	43·2	B
	14	0†	10·28	525·0	43·5	667·4	42·8	B
	15	0†	10·07	518·0	43·1	646·9	42·3	B
	16	0†	10·60	499·5	42·7	580·3	41·9	B
	17	0†	04·91	519·7	42·3	578·0	41·3	B
	18	0†	14·13	507·0	42·0	661·3	40·8	B
	19	0	15·74	514·9	41·6	705·9	40·3	H
	20	0	16·38	516·8	41·2	732·2	39·9	H
	21	0	15·41	510·7	40·8	744·0	39·5	W
	22	0	16·48	504·1	40·4	749·3	39·9	H
	23	0	18·03	502·9	40·3	746·4	40·5	H
6	0	0	21·04	507·2	40·5	747·9	41·9	H
	1	0	24·15	513·1	41·1	747·8	43·2	H
	2	2	24·75	518·1	42·3	741·7	44·9	H
	3	0	23·51	523·3	43·4	747·9	46·2	H
	4	0	21·97	524·9	44·5	743·9	47·5	H
	5	0	18·34	526·2	45·5	760·8	48·2	H
	6	0	16·75	526·5	46·2	769·1	48·4	B
	7	0	17·15	525·3	46·8	762·6	48·5	B
	8	0	15·89	525·4	47·0	758·2	48·5	B
	9	0	16·18	525·8	47·0	748·3	48·4	B
	10	0†	16·12	530·0	47·1	710·2	48·1	B
	11	0	16·55	526·6	47·0	707·3	48·0	W
	12	0	15·17	525·9	47·0	717·0	47·9	W

DECLINATION. Torsion removed,—April 5^d 4^h, $-3\frac{1}{2}°$. Effect of $+10°$ of Torsion $= -0'·84$.
BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar.		Balance.		Observer's Initial.
		Corrected.	Thermometer.	Corrected.	Thermometer.	
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
7 13 0	25 16·68	521·9	52·3	727·7	52·5	H
14 0	16·18	519·5	51·9	735·0	52·0	H
15 0	17·93	519·4	51·5	739·7	51·5	H
16 0	17·27	520·3	51·2	740·8	50·9	H
17 0	16·82	520·5	50·8	747·5	50·3	H
18 0	16·18	521·8	50·4	750·7	49·8	H
19 0	16·92	518·2	50·1	758·2	49·5	W
20 0	16·65	519·6	49·9	760·5	49·3	W
21 0	15·71	514·1	49·7	759·5	49·1	B
22 0	16·63	511·0	49·6	764·3	49·5	W
23 0	19·34	508·9	49·6	753·9	49·9	W
8 0 0	22·22	511·4	49·8	742·9	50·4	W
1 0	24·97	516·3	50·0	739·0	51·1	W
2 0	25·19	517·9	50·6	743·5	52·1	W
3 0	22·53	516·7	51·2	743·0	53·1	W
4 0	20·77	519·2	51·9	742·5	54·0	W
5 0	19·88	522·6	52·7	742·3	54·9	W
6 0	18·90	525·3	53·3	740·3	55·5	H
7 0	18·16	531·4	53·9	737·3	55·6	H
8 0†	13·46	525·9	54·0	744·7	55·2	H
9 0	15·07	526·0	54·0	751·1	55·2	H
10 0	13·59	524·0	53·9	749·0	55·0	H
11 0	16·28	522·2	53·9	744·7	54·5	B
12 0	15·85	522·5	53·7	735·6	54·0	B
13 0	25 16·28	521·0	53·4	731·7	53·5	B
14 0	21·68	523·8	53·1	714·7	53·0	B
15 0	16·12	522·2	52·9	724·3	52·8	B
16 0	15·34	521·6	52·7	732·0	52·5	B
17 0	14·58	524·2	52·4	734·5	52·2	B
18 0	15·01	522·1	52·2	736·1	52·0	B
19 0	15·38	521·4	52·0	737·4	51·9	H
20 0	14·51	521·9	51·9	739·5	51·9	H
21 0	14·23	518·2	51·9	742·8	51·8	W
22 0	15·74	516·6	51·8	741·6	51·9	H
23 2	17·29	513·1	51·9	739·7	52·4	H
9 0 0	19·71	512·4	52·0	731·2	53·0	H
1 0	22·87	514·1	52·3	721·8	53·9	H
2 0†	24·10	518·1	52·9	725·7	54·9	H
3 0	22·87	518·3	53·6	731·1	55·7	H
4 0	21·46	518·7	54·3	728·8	56·5	H
5 0	20·69	523·2	55·0	726·4	57·0	H
6 0	19·37	529·4	55·4	729·0	57·0	B
7 0	19·32	535·7	55·8	730·5	57·0	B
8 0	18·70	537·6	55·8	729·7	56·8	B
9 0	18·38	533·3	55·8	734·5	56·5	B
10 0	16·62	531·0	55·6	739·7	56·1	B
11 0	16·66	529·8	55·4	740·6	55·7	W
12 0	16·15	527·1	55·0	735·9	55·4	W
13 0	25 16·62	528·6	54·9	730·6	55·0	W
14 0	17·22	528·4	54·7	730·4	54·7	W
15 0	16·92	525·6	54·4	733·3	54·4	W
16 0	15·72	525·5	54·0	733·6	54·0	W
17 0	15·31	525·7	53·8	735·1	53·3	W
18 0	15·44	525·1	53·5	736·6	52·5	W
19 0	14·13	524·4	53·0	743·3	52·0	B
20 0	13·36	521·7	52·6	747·8	51·5	B

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar.		Balance.		Observer's Initial.
		Corrected.	Thermometer.	Corrected.	Thermometer.	
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
9 21 0	25 15·15	517·1	52·2	743·6	51·3	H
22 0	17·49	509·3	51·9	733·4	51·2	H
23 0	23·01	508·4	51·8	730·7	51·5	H
10 0 0	24·96	511·7	51·9	722·6	52·5	H
1 0	27·68	518·9	52·2	727·5	53·5	B
2 0	28·11	522·5	52·8	731·4	54·6	B
3 0	26·30	519·1	53·4	744·3	55·8	H
4 0	22·67	535·6	54·2	739·8	57·0	H
5 0	19·91	528·3	55·2	734·7	57·8	B
6 0	18·81	533·9	56·0	728·3	58·1	W
7 0	18·30	531·6	56·5	734·1	58·1	W
8 0	17·91	531·1	56·7	737·1	57·5	W
9 0	18·08	529·5	56·4	738·2	56·5	W
10 0	17·65	530·1	56·0	734·8	55·6	W
11 0	17·71	529·7	55·3	733·9	54·5	H
12 0	17·36	528·3	54·6	729·5	53·6	H
13 0†	25 08·63	526·9	54·0	703·2	52·5	H
14 0†	14·73	520·3	53·4	726·9	52·0	H
15 0	15·32	522·9	52·8	731·8	51·3	H
16 0	16·19	521·1	52·3	730·0	50·3	H
17 0	15·42	523·9	51·8	729·9	49·9	H
18 0	16·23	525·5	51·3	732·8	49·2	H
19 0	15·44	522·2	50·9	741·5	49·0	W
20 0	15·59	520·7	50·5	742·2	48·7	W
21 0	16·33	514·0	50·1	746·4	48·6	B
22 0	17·74	512·3	49·9	747·7	48·6	W
23 0	19·01	514·7	49·8	747·7	49·0	W
11 0 0	21·04	517·3	49·8	742·5	49·5	W
1 0	23·79	518·4	49·9	745·1	50·0	W
2 0	24·45	524·0	50·2	749·2	50·8	W
3 0	22·17	520·8	50·6	750·7	51·5	W
4 0	20·55	523·5	51·2	751·2	52·5	W
5 0	18·84	524·1	51·8	747·6	53·4	W
6 0	18·14	527·6	52·4	747·5	54·0	H
7 0	17·60	527·3	52·9	744·5	54·1	H
8 0	17·53	527·3	53·0	741·1	53·9	H
9 0	17·76	528·3	53·0	739·1	53·2	H
10 0	17·26	525·9	52·8	740·5	52·5	H
11 0	17·07	526·2	52·4	739·1	51·7	B
12 0	17·91	525·1	51·9	735·7	50·9	B
13 0	25 17·94	525·0	51·4	735·5	50·2	B
14 0	17·80	523·4	50·9	734·1	49·5	B
15 0	16·89	524·5	50·5	734·8	49·0	B
16 0	16·08	523·8	50·0	739·1	48·3	B
17 0	19·24	519·5	49·5	742·0	47·7	B
18 0	18·75	526·9	49·1	731·2	47·3	B
19 0	16·82	527·8	48·6	735·6	46·9	H
20 0	16·45	525·7	48·2	739·9	46·9	H
21 0	14·94	521·3	48·0	744·5	47·0	W
22 0	15·69	519·0	47·9	750·0	47·4	H
23 0	18·23	516·2	47·9	748·7	48·0	H
12 0 0	21·53	517·5	48·0	742·2	48·3	H
1 0	24·22	516·5	48·2	732·7	48·9	H
2 0	24·62	520·1	48·2	735·9	48·9	H
3 0	24·08	522·3	48·4	742·2	48·9	H
4 0	22·17	521·6	48·4	749·5	49·0	H

DECLINATION. Magnet untouched, April 5d—May 28d.

BIFILAR. Observed 2m after the Declination, $k=0{\cdot}000140$. BALANCE. Observed 3m after the Declination, $k=0{\cdot}0000085$.

† Extra Observations made.

April 11d 18h. The magnets appear to be slightly disturbed.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
12	5	0	25	20·05	522·2	48·4	751·5	49·0	H
	6	0		18·10	526·6	48·6	753·2	48·9	B
	7	0		17·02	531·2	48·7	753·3	48·9	B
	8	0		17·36	531·5	48·7	751·8	48·9	B
	9	0		17·49	530·1	48·7	751·8	48·8	B
	10	0		17·94	528·7	48·7	751·9	48·8	B
	11	5		17·49	528·7	48·6	750·4	48·5	W
	12	0		17·53	527·0	48·4	750·3	48·3	W
	13	0	25	17·63	526·8	48·2	750·0	48·1	W
	14	0		17·54	526·2	48·0	749·0	47·9	W
	15	0		17·86	526·5	47·9	748·5	47·7	W
	16	0		16·84	525·9	47·8	747·2	47·5	W
	17	0		16·63	525·1	47·7	747·0	47·3	W
	18	0		16·18	524·8	47·6	749·0	47·1	W
	19	0		15·54	523·9	47·4	753·7	47·0	B
	20	0		14·60	522·5	47·2	756·2	46·9	B
	21	0		14·67	519·1	47·1	756·5	47·2	H
	22	0		16·15	515·1	47·1	753·7	47·5	B
	23	0		18·84	514·7	47·3	751·1	48·3	H
13	0	0		21·70	513·2	47·8	741·4	49·2	H
	1	0		24·55	517·6	48·4	729·0	50·3	H
	2	0		25·09	521·6	49·1	729·7	51·3	B
	3	0		23·48	524·5	50·0	727·9	52·4	H
	4	0		21·09	526·5	50·8	726·1	53·1	B
	5	0		18·97	524·0	51·4	728·4	53·8	B
	6	0		18·11	528·0	52·0	731·5	54·0	W
	7	0		17·58	527·8	52·2	730·3	53·9	W
	8	0		17·76	529·6	52·2	732·2	53·5	W
	9	0		17·84	529·6	52·1	733·5	53·0	W
	10	0		17·65	528·4	52·0	736·4	52·6	W
	11	0		17·39	528·5	51·9	737·3	52·3	H
	12	0		17·80	526·6	51·5	734·9	51·9	H
14	13	0	25	15·88	533·9	51·8	721·9	51·8	B
	14	0		16·15	529·9	51·6	722·1	51·7	B
	15	0		16·01	529·9	51·4	718·2	51·5	B
	16	0		16·18	526·5	51·3	726·2	51·5	B
	17	0†		18·28	526·0	51·2	716·8	51·5	B
	18	0		17·47	531·3	51·2	705·9	51·5	B
	19	0		15·64	524·6	51·1	711·7	51·4	H
	20	0		17·36	524·6	51·0	718·2	51·4	H
	21	0		15·27	517·8	51·1	731·9	51·5	W
	22	0		15·98	514·4	51·1	729·8	51·6	H
	23	0		17·93	514·0	51·2	724·5	52·1	H
15	0	0		20·23	515·4	51·4	709·3	52·5	H
	1	0		24·23	515·2	51·7	714·1	52·9	H
	2	0		26·60	515·5	52·0	720·7	53·3	H
	3	0		24·80	517·4	52·4	735·3	53·9	H
	4	0		23·76	517·8	52·8	736·5	54·3	H
	5	0		21·66	523·9	53·0	733·8	54·4	H
	6	0		20·11	528·4	53·1	735·1	54·4	B
	7	0		18·13	529·7	53·2	736·5	54·4	B
	8	0†		14·70	529·1	53·3	745·0	54·1	B
	9	0†		13·81	538·5	53·3	733·2	54·0	B
	10	0†		15·47	517·4	53·2	733·8	53·8	B
	11	0		14·75	523·6	53·0	728·4	53·5	W
	12	0		14·26	524·4	52·8	720·5	52·8	W

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
15	13	0	25	14·31	522·4	52·6	719·5	52·2	W
	14	0		14·94	521·0	52·3	708·1	51·5	W
	15	0		14·87	522·0	51·8	720·0	50·7	W
	16	0		15·89	521·3	51·3	722·4	49·9	W
	17	0		16·46	520·3	50·8	718·5	49·1	W
	18	0		15·41	521·0	50·2	724·5	48·3	W
	19	0		16·15	517·3	49·7	731·6	47·5	B
	20	0		15·17	517·3	49·1	726·2	47·1	B
	21	0		16·13	515·9	48·6	706·4	47·2	H
	22	0		16·39	514·4	48·3	717·4	47·4	B
	23	0		17·74	514·5	48·2	732·3	48·2	H
16	0	0		20·11	517·2	48·3	725·1	49·2	H
	1	0		21·30	517·6	49·0	706·4	50·3	B
	2	0		22·13	520·2	49·8	728·4	51·6	B
	3	0		22·92	525·5	50·5	731·0	52·6	H
	4	0		22·08	527·7	51·3	723·4	53·5	B
	5	0		20·97	524·0	51·9	744·1	53·8	B
	6	0		20·49	527·2	52·2	755·9	53·6	W
	7	0		18·34	528·5	52·3	751·9	53·3	W
	8	0		17·58	527·8	52·2	745·3	52·8	W
	9	0		17·53	525·8	52·0	740·8	52·4	W
	10	0		17·04	525·0	51·7	737·4	52·0	W
	11	0		17·31	526·7	51·4	732·9	51·5	H
	12	0		14·84	524·5	51·1	732·1	51·0	H
	13	0†	25	10·20	516·9	50·9	725·5	50·6	H
	14	0†		12·65	522·3	50·7	653·0	50·5	H
	15	0†		06·54	517·5	50·5	635·1	50·4	H
	16	0†		07·08	522·8	50·3	659·3	50·3	H
	17	0†		12·11	524·8	50·2	670·7	50·2	H
	18	0†		22·22	549·2	50·1	554·5	50·1	H
	19	0†		28·35	520·9	50·0	599·8	49·9	W
	20	0†		27·58	490·5	49·9	643·7	49·6	W
	21	0†		28·80	462·2	49·8	688·0	49·5	W
	22	0†		27·55	457·9	49·7	707·7	49·8	W
	23	0†		29·73	472·0	49·8	754·9	50·1	W
17	0	0†		27·29	480·6	49·9	837·7	50·8	W
	1	0†		43·00	559·8	50·3	1082·9	51·8	W
	2	0†		25·56	546·3	50·9	948·3	52·8	W
	3	0†		26·72	562·8	51·7	945·2	54·0	B
	4	0†		27·61	577·5	52·6	1016·0	55·3	B
	5	0†		26·16	565·0	53·4	915·6	56·2	W
	6	0†		19·93	593·2	54·2	931·8	56·5	W
	7	0†		20·06	539·8	54·7	940·7	56·7	H
	8	0†		18·10	526·7	54·9	929·9	56·3	H
	9	0†		15·65	523·7	54·8	847·1	56·0	H
	10	0†		07·91	515·7	54·7	797·1	55·7	H
	11	0†		04·61	530·0	54·6	727·3	55·4	H
	12	0†		10·38	504·1	54·3	749·8	55·0	B
	13	0†	25	15·41	486·1	54·0	681·0	54·5	B
	14	0†		08·77	525·7	53·8	676·4	54·2	B
	15	0		17·00	513·3	53·6	746·5	53·9	B
	16	0		16·10	512·8	53·3	755·4	53·3	B
	17	0		17·07	515·3	53·0	760·1	52·7	B
	18	0		16·84	511·7	52·7	764·5	52·2	B
	19	0		16·32	513·1	52·3	759·5	51·7	H
	20	0		16·06	511·3	52·0	760·0	51·4	H

DECLINATION. Magnet untouched, April 5^d—May 28^d.

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs. d.	h.	m.	Declination. °	′	Bifilar. Corrected. Sc. Div.	Bifilar. Thermometer. °	Balance. Corrected. Mic. Div.	Balance. Thermometer. °	Observer's Initial.
17	21	0	25	15·45	510·3	51·8	751·2	51·1	W
	22	0		18·41	514·8	51·6	727·2	51·1	H
	23	0		18·77	515·7	51·4	714·2	51·2	H
18	0	0		21·88	510·1	51·2	724·0	51·4	W
	1	0		24·08	518·0	51·3	727·3	51·8	W
	2	0		25·02	511·9	51·6	741·1	52·6	W
	3	0		25·13	522·9	52·0	735·6	53·5	W
	4	0		22·74	518·2	52·5	742·0	54·2	W
	5	0		20·80	521·6	53·0	746·0	54·9	W
	6	0		20·18	537·9	53·8	743·1	55·5	B
	7	0		21·50	529·6	54·2	734·0	55·7	B
	8	0		19·53	533·8	54·5	748·6	55·5	B
	9	0		17·12	531·0	54·5	751·4	55·0	B
	10	0†		14·92	526·1	54·2	746·2	54·5	B
	11	0†		12·73	528·6	53·9	719·9	54·0	W
	12	0		12·55	517·2	53·6	706·9	53·5	W
	13	0	25	15·83	516·5	53·3	725·7	53·0	W
	14	0		17·56	517·7	53·0	728·9	52·5	W
	15	0		16·38	520·2	52·7	739·4	52·0	W
	16	0		16·99	518·7	52·4	747·9	51·6	W
	17	0		17·19	518·2	52·1	748·5	51·2	W
	18	0		17·02	519·3	51·8	749·7	50·8	W
	19	0		16·38	519·6	51·5	752·5	50·5	B
	20	0		15·07	518·2	51·2	757·6	50·2	B
	21	0		14·77	515·6	50·9	757·1	50·2	H
	22	0		15·45	509·9	50·9	756·8	50·2	B
	23	0		18·11	507·1	50·9	755·3	50·5	H
19	0	0		20·79	504·8	50·9	749·5	51·0	B
	1	0		22·82	511·0	51·2	748·1	52·1	H
	2	0		23·58	515·7	51·8	750·3	53·2	B
	3	0		22·55	516·6	52·5	754·9	54·5	B
	4	0		21·27	528·6	53·2	751·5	55·5	B
	5	0		19·61	522·0	54·0	745·9	56·3	B
	6	0		18·34	521·7	54·9	753·4	56·5	W
	7	0		18·37	527·1	55·0	755·5	56·5	W
	8	0		18·20	529·3	55·1	758·5	56·3	W
	9	0		18·08	527·5	55·1	753·2	56·0	W
	10	0		17·89	525·4	55·0	750·2	55·7	W
	11	0		15·15	532·8	55·0	737·4	55·5	H
	12	0		18·14	525·0	54·9	735·8	55·4	H
	13	0	25	17·39	523·5	54·8	739·2	55·2	H
	14	0		18·14	524·3	54·6	739·8	55·1	H
	15	0		17·02	520·8	54·4	746·3	55·0	H
	16	0		16·68	521·4	54·3	745·0	54·8	H
	17	0		15·96	520·8	54·2	743·0	54·5	H
	18	0		15·44	520·7	54·0	745·0	54·2	H
	19	0		15·44	520·6	53·9	749·1	54·0	W
	20	0		14·64	516·6	53·8	750·5	53·9	W
	21	0		15·98	510·9	53·8	750·1	54·0	B
	22	0		17·10	507·5	53·8	743·3	54·0	W
	23	0		19·44	504·0	53·9	746·8	55·1	W
20	0	0		23·21	508·3	54·4	747·5	56·2	W
	1	0		25·14	510·4	55·0	744·1	57·2	W
	2	0		24·75	512·0	55·9	736·8	58·0	W
	3	0		24·13	514·2	56·6	743·5	58·5	W
	4	0		21·17	521·5	57·0	753·8	58·5	W

Göttingen Mean Time of Declination Obs. d.	h.	m.	Declination. °	′	Bifilar. Corrected. Sc. Div.	Bifilar. Thermometer. °	Balance. Corrected. Mic. Div.	Balance. Thermometer. °	Observer's Initial.
20	5	0	25	20·38	523·6	57·2	757·9	58·5	W
	6	0		17·76	524·9	57·3	751·5	58·4	H
	7	0		18·16	528·1	57·3	744·9	58·2	H
	8	0		17·39	526·7	57·2	744·8	58·0	H
	9	0		17·24	527·7	57·0	742·9	57·4	H
	10	0		17·56	528·4	57·0	738·3	56·9	H
	11	0		17·04	526·0	56·6	740·9	56·3	B
	12	0		17·89	525·2	56·2	743·4	56·0	B
21	13	0	25	16·84	525·9	51·7	735·8	50·9	W
	14	0		15·74	526·6	51·4	735·8	50·5	W
	15	0		17·36	526·2	51·1	735·7	50·2	W
	16	0		14·57	522·2	50·8	735·3	49·9	W
	17	0		16·68	523·7	50·5	738·2	49·5	W
	18	0		16·84	526·2	50·2	731·2	49·2	W
	19	0		16·92	525·1	50·0	737·4	49·0	B
	20	0		14·80	523·6	49·8	745·4	48·9	B
	21	0		13·02	517·2	49·6	758·3	49·0	B
	22	0		13·69	512·9	49·4	748·3	49·2	B
	23	0		17·46	509·9	49·4	739·1	49·5	B
22	0	0		20·87	511·5	49·6	737·6	50·1	B
	1	0		23·19	515·7	49·9	723·6	50·7	B
	2	0		23·48	522·2	50·3	733·1	51·4	B
	3	0		23·56	527·7	50·7	740·9	51·9	W
	4	0		22·20	529·2	51·2	744·3	52·5	W
	5	0		20·96	535·0	51·8	743·2	53·0	W
	6	0		20·06	534·5	52·4	754·3	53·6	W
	7	0		19·17	528·0	52·9	753·4	54·0	W
	8	0		18·27	533·7	53·2	745·3	54·0	W
	9	0		18·10	532·6	53·3	739·2	53·7	W
	10	0		18·20	530·8	53·1	734·4	53·3	W
	11	0		18·05	530·8	52·9	731·5	52·8	D
	12	0		17·70	530·5	52·6	727·6	52·3	D
	13	0	25	17·70	529·6	52·3	731·3	51·9	D
	14	0		16·82	529·4	51·9	729·7	51·4	D
	15	0		17·58	527·8	51·6	727·2	50·9	D
	16	0		16·97	526·1	51·2	738·1	50·4	D
	17	0		16·60	527·1	50·8	735·7	50·0	D
	18	0		15·39	527·6	50·5	751·9	49·7	D
	19	0		14·40	525·7	50·1	768·0	49·3	W
	20	0		12·75	523·5	49·9	733·5	49·1	W
	21	0		12·46	520·0	49·7	763·7	49·2	B
	22	0		13·32	516·2	49·6	775·4	49·4	W
	23	0		16·97	513·4	49·7	734·8	49·9	W
23	0	0		20·85	512·3	49·9	724·8	50·4	B
	1	0		23·72	517·6	50·2	711·8	51·0	W
	2	0		22·04	517·7	50·7	729·6	51·7	W
	3	0		22·03	522·0	51·2	749·7	52·5	W
	4	0		22·35	533·2	51·9	747·3	53·3	W
	5	0		22·42	529·0	52·6	754·6	54·0	W
	6	0		20·40	537·1	53·0	747·0	54·2	W
	7	0		19·24	534·3	53·2	748·5	54·1	W
	8	0		19·51	535·0	53·2	746·5	53·8	W
	9	0		18·25	536·2	53·1	720·7	53·5	W
	10	0		17·96	534·7	53·0	734·2	53·2	W
	11	0		17·63	534·9	52·8	727·5	52·8	B
	12	0		16·99	532·8	52·6	726·0	52·5	B

DECLINATION. Magnet untouched, April 5ᵈ—May 28ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.
April 18ᵈ 6ʰ—8ʰ. The magnets evidently unsteady.
April 19ᵈ 0ʰ. The magnets unsteady.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
23	13	0	25	16·82	530·5	52·3	725·6	52·2	B
	14	0		16·99	528·0	52·0	728·9	52·0	B
	15	0		16·99	528·0	51·8	729·2	51·7	B
	16	0		18·50	525·9	51·6	727·3	51·1	B
	17	0		15·52	526·0	51·2	726·2	50·5	B
	18	0		15·72	525·1	50·8	726·8	49·9	B
	19	0		14·20	524·6	50·4	731·8	49·5	W
	20	0		13·56	523·2	50·0	733·3	49·3	W
	21	0		13·79	521·5	49·8	734·3	49·2	W
	22	0		14·67	517·7	49·7	740·4	49·4	W
	23	0		16·92	512·2	49·6	734·9	49·6	W
24	0	0		19·68	514·2	49·7	729·6	50·1	W
	1	0		23·39	519·5	50·0	714·1	50·8	W
	2	0		24·53	522·5	50·5	709·3	51·5	W
	3	0		23·66	529·4	51·0	717·7	52·3	W
	4	0		22·31	533·3	51·7	723·8	53·0	W
	5	0		20·40	529·8	52·3	727·1	53·6	W
	6	0		19·82	538·0	52·9	726·8	54·2	B
	7	0		18·97	532·0	53·4	731·4	54·5	B
	8	0		18·23	535·5	53·8	730·5	54·5	B
	9	0		16·75	532·6	53·8	731·4	53·9	B
	10	0		17·78	530·3	53·5	731·2	53·3	B
	11	0		17·36	530·1	53·0	722·7	53·0	B
	12	0		16·15	528·9	52·8	720·3	52·7	B
	13	0	25	15·11	530·6	52·5	702·7	52·3	D
	14	0		16·10	527·4	52·2	707·1	51·9	D
	15	0		16·82	526·1	51·9	710·2	51·5	D
	16	0		16·13	525·4	51·6	710·8	51·1	D
	17	0		17·63	521·1	51·3	714·1	50·9	D
	18	0		14·87	525·4	51·0	721·9	50·6	W
	19	0		15·34	528·8	50·8	720·9	50·2	W
	20	0		12·40	526·1	50·6	730·3	50·0	W
	21	0		12·55	523·5	50·4	728·0	50·0	H
	22	0		12·82	520·2	50·3	721·1	50·4	H
	23	0		16·90	511·7	50·3	725·6	51·0	H
25	0	0		21·24	511·9	50·7	718·5	51·9	H
	1	0		24·89	524·3	51·2	713·6	52·8	B
	2	0		28·90	514·6	51·8	732·9	53·9	B
	3	0		31·25	525·4	52·6	761·1	55·1	W
	4	0		25·47	515·1	53·4	781·0	56·0	W
	5	0		23·65	546·9	54·2	757·7	56·7	B
	6	0		24·84	535·1	54·9	817·5	57·2	H
	7	0		13·12	572·3	55·3	922·9	57·4	H
	8	0		12·13	517·3	55·5	822·1	57·2	D
	9	0		17·65	524·0	55·6	780·3	57·0	D
	10	0		18·70	527·5	55·7	748·1	56·9	B
	11	0	25	16·99	529·3	55·5	728·0	56·5	H
	12	0†	24	48·47	515·8	55·3	640·2	56·0	H
	13	0†	25	10·61	522·1	55·0	621·4	55·7	H
	14	0†		14·40	522·5	54·8	697·6	55·4	H
	15	0		16·82	521·1	54·5	719·8	55·0	H
	16	0		13·00	517·0	54·2	710·6	54·2	H
	17	0		18·81	518·6	53·8	715·6	53·5	H
	18	0		15·51	519·6	53·4	719·6	52·9	H
	19	0		12·65	516·9	53·0	733·3	52·3	W
	20	0		13·83	514·3	52·6	744·0	51·9	W

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
25	21	0	25	12·89	511·0	52·3	731·4	51·8	B
	22	3		16·52	509·5	52·1	732·8	52·1	W
	23	0		17·36	518·6	52·2	722·9	52·8	W
26	0	0†		23·54	499·4	52·5	739·5	53·6	W
	1	0†		33·28	488·1	52·8	740·6	54·2	W
	2	0†		26·23	525·3	53·2	726·1	54·6	W
	3	0		24·45	519·7	53·6	734·5	54·9	W
	4	0†		26·90	548·6	53·9	765·3	55·3	W
	5	0†		24·69	509·0	54·2	806·6	55·7	W
	6	0†		14·08	518·5	54·5	838·0	56·1	H
	7	0		16·92	531·8	54·8	811·1	56·2	H
	8	0		19·44	527·8	55·1	782·2	55·9	H
	9	0		14·64	527·7	55·0	762·9	55·3	H
	10	0		16·79	522·9	54·8	746·3	54·5	H
	11	0		17·40	520·8	54·3	734·3	53·5	B
	12	9		17·42	517·2	53·7	724·0	52·5	B
	13	0†	25	28·32	510·6	53·1	625·4	51·8	B
	14	0†		13·63	516·2	52·6	641·6	51·2	B
	15	0		16·30	515·8	52·1	676·0	50·5	B
	16	0†		20·49	490·0	51·6	622·2	49·7	B
	17	0†		23·02	501·5	51·1	612·7	49·3	B
	18	0		15·71	519·0	50·6	647·6	48·8	B
	19	0		15·45	506·5	50·1	680·2	48·3	H
	20	0		14·30	509·3	49·8	721·4	48·2	H
	21	0†		16·53	510·8	49·5	731·6	48·2	W
	22	0†		16·79	504·0	49·2	747·8	48·6	H
	23	0		18·58	503·2	49·2	744·3	49·2	H
27	0	0		20·30	507·1	49·4	748·5	50·0	H
	1	0		22·53	512·6	49·8	750·6	51·0	H
	2	0		22·91	519·6	50·2	745·0	51·5	H
	3	0		23·19	525·2	50·6	753·7	52·0	H
	4	0		21·10	523·1	51·0	751·2	52·4	H
	5	0		18·34	528·7	51·4	760·4	52·8	H
	6	0†		18·10	547·6	51·8	768·0	52·9	B
	7	0†		09·69	554·5	52·0	798·7	53·0	B
	8	0†		16·84	531·4	52·2	771·1	53·1	B
	9	0†		17·89	532·9	52·3	747·2	52·9	B
	10	0†		16·70	519·6	52·2	738·9	52·7	B
	11	0†		21·24	511·7	52·1	703·7	52·5	W
	12	0		19·41	525·6	52·0	697·3	52·2	W
28	13	0	25	17·33	524·7	54·8	733·4	54·3	H
	14	0		16·73	522·9	54·2	734·6	53·7	H
	15	0		16·41	522·2	53·6	739·3	52·8	H
	16	0		15·34	521·1	53·0	739·3	51·9	H
	17	0		15·41	515·9	52·4	736·5	51·0	H
	18	0		15·34	513·5	51·8	738·1	50·0	H
	19	0		16·05	519·5	51·2	731·7	49·4	W
	20	0		16·62	514·3	50·7	737·6	49·0	W
	21	4		15·81	507·6	50·2	737·7	48·9	B
	22	0		15·85	512·3	50·0	747·6	49·2	W
	23	0		18·57	516·2	49·9	741·6	49·9	W
29	0	0		20·50	515·8	50·2	741·8	51·5	W
	1	0		22·84	511·3	51·0	737·3	53·3	W
	2	0		26·13	525·5	52·3	742·3	55·5	W
	3	0		25·53	527·8	53·8	729·3	57·5	W
	4	0		25·11	516·5	55·3	737·5	59·3	W

DECLINATION. Magnet untouched, April 5^d—May 28^d.

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
29	5	0	25 22·85	539·0	56·9	764·4	60·7	W
	6	0	20·09	530·4	58·0	780·6	61·5	W
	7	0	17·61	538·2	58·8	787·9	61·9	H
	8	0†	12·78	529·1	59·1	805·2	61·6	H
	9	0	16·36	530·1	59·2	771·8	61·0	H
	10	0	16·52	527·0	59·0	758·0	60·0	H
	11	0†	15·54	532·5	58·6	739·5	59·0	B
	12	0†	10·75	528·5	58·0	704·7	58·4	B
	13	0†	25 09·86	514·3	57·7	711·8	57·7	B
	14	0†	15·76	520·1	57·1	721·4	56·5	B
	15	0	16·41	518·9	56·5	715·4	55·5	B
	16	0	18·13	509·8	55·8	717·4	54·0	B
	17	0†	16·46	518·9	54·9	704·4	52·7	B
	18	0	12·87	518·3	54·0	705·2	51·6	B
	19	0	13·54	517·0	53·1	721·6	50·6	H
	20	0	12·98	514·0	52·4	747·1	50·0	H
	21	0	13·63	511·9	51·9	747·4	49·8	W
	22	0	14·82	511·2	51·4	731·5	49·9	H
	23	0	17·26	510·5	51·2	721·3	50·5	W
30	0	0	21·27	512·0	51·2	758·9	52·0	H
	1	0	23·34	508·0	51·8	766·7	53·5	H
	2	0	22·53	520·5	52·4	731·5	55·0	H
	3	0	21·86	523·8	53·5	735·4	56·5	H
	4	0	20·06	525·7	54·7	742·5	58·0	H
	5	0	19·46	530·6	56·0	733·0	59·5	H
	6	0	18·16	537·2	57·1	753·3	60·1	B
	7	0	14·41	534·6	57·9	785·5	60·5	B
	8	0	13·49	536·1	58·4	790·8	61·5	B
	9	0	15·45	528·1	58·7	774·9	60·3	B
	10	0	15·54	528·1	58·5	750·1	59·5	B
	11	0	13·64	527·6	58·0	723·8	58·5	W
	12	0	18·50	529·0	57·6	678·5	57·4	W
	13	0	25 15·09	524·9	56·9	662·4	56·4	W
	14	0	23·07	512·4	56·2	635·4	55·3	W
	15	0	19·32	514·1	55·6	608·1	54·4	W
	16	0	16·65	524·7	54·9	629·0	53·4	W
	17	0	14·73	504·3	54·2	657·4	52·3	W
	18	0	14·58	518·8	53·5	672·9	51·5	W
	19	0	12·78	518·8	52·9	704·2	50·8	B
	20	0	12·51	516·8	52·3	716·3	50·4	B
	21	0	15·71	499·2	51·9	726·7	50·4	H
	22	0	18·77	494·4	51·6	736·1	50·5	B
	23	0	21·48	497·5	51·3	721·6	51·5	H
1	0	0	24·55	508·9	51·9	723·3	53·2	B
	1	0	22·45	526·9	52·5	724·0	55·2	H
	2	0	23·45	530·1	53·9	717·1	57·2	B
	3	0	21·43	527·6	55·4	713·3	59·0	B
	4	0	19·17	530·8	57·0	726·1	60·7	B
	5	0	18·60	534·6	58·4	750·4	62·3	B
	6	0	18·77	539·9	59·7	755·4	63·5	W
	7	0†	12·15	540·9	60·7	761·6	64·0	W
	8	0	14·50	535·7	61·3	754·6	64·2	W
	9	0	15·14	529·2	61·7	745·6	63·9	W
	10	0	10·97	522·7	61·7	735·3	63·2	W
	11	0†	09·42	516·6	61·4	699·6	62·6	H
	12	0†	08·88	517·5	61·1	680·7	62·1	H

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
1	13	0	25 12·83	519·7	60·8	674·1	61·5	H
	14	0	15·41	524·0	60·4	685·8	60·6	H
	15	0	17·81	520·4	59·9	693·8	59·7	H
	16	0	18·13	520·8	59·3	697·4	58·6	H
	17	0	16·21	524·0	58·6	703·4	57·6	H
	18	0	14·68	515·8	57·9	710·7	56·5	H
	19	0	16·52	514·2	57·3	717·1	56·0	W
	20	0	17·13	518·7	56·9	716·0	55·8	W
	21	0	15·92	514·6	56·6	729·1	55·9	B
	22	0	16·60	513·6	56·3	729·6	56·2	W
	23	0	19·15	504·2	56·3	731·2	56·8	W
2	0	0	22·25	513·2	56·6	725·2	57·5	W
	1	0	22·25	520·5	57·0	723·6	58·5	B
	2	0	22·40	525·9	57·7	718·7	59·5	W
	3	0	22·40	529·8	58·6	721·6	60·6	W
	4	0	21·86	531·5	59·5	727·5	62·0	W
	5	0	18·79	538·3	60·5	728·6	63·3	W
	6	0	15·52	538·9	61·5	738·7	64·4	H
	7	0	18·37	537·7	62·5	749·0	65·2	H
	8	0	19·04	536·2	63·2	734·4	65·4	H
	9	0	18·10	534·1	63·5	737·4	65·5	H
	10	0	16·89	526·5	63·3	738·4	64·5	H
	11	0†	12·85	541·8	63·1	696·8	63·5	B
	12	0†	11·14	524·7	62·7	645·4	62·7	B
	13	0†	25 07·60	509·4	62·1	642·3	62·0	B
	14	0	17·34	516·9	61·6	652·2	61·0	B
	15	0†	15·18	506·5	61·0	662·3	59·7	B
	16	0	17·00	519·1	60·2	661·8	58·5	B
	17	0	13·59	519·8	59·4	679·7	57·3	B
	18	0†	16·90	511·3	58·7	680·0	56·2	B
	19	0	19·76	522·5	57·9	657·3	55·6	H
	20	0	16·75	519·5	57·2	667·5	55·3	H
	21	0	17·26	516·2	56·8	683·8	55·2	W
	22	0	16·79	513·7	56·4	705·0	55·5	H
	23	0	17·78	516·4	56·3	710·8	56·1	H
3	0	0	19·75	516·8	56·4	711·8	57·2	H
	1	0	21·46	518·9	57·0	707·3	58·6	H
	2	0	21·79	522·0	58·1	712·3	60.5	H
	3	0	22·87	529·6	59·2	719·7	62·5	H
	4	0	26·32	525·8	60·4	737·2	63·5	H
	5	0†	17·74	546·1	61·5	785·5	64·5	H
	6	0	20·18	542·3	62·3	806·0	64·9	B
	7	0	18·84	537·5	62·9	797·8	65·0	B
	8	0	18·16	526·8	63·2	788·0	64·8	B
	9	0	18·43	526·2	63·1	749·5	63·6	B
	10	0	18·30	524·4	62·7	734·6	62·4	B
	11	0	17·29	523·3	62·0	727·1	61·2	W
	12	0	17·39	521·2	61·3	729·7	60·2	W
	13	0	25 17·33	519·8	60·6	733·6	59·1	W
	14	0	17·09	520·0	59·9	737·1	58·2	W
	15	0	17·39	519·6	59·2	737·3	57·4	W
	16	0	16·93	518·5	58·6	732·7	56·6	W
	17	0	15·59	518·5	58·0	733·8	56·0	W
	18	0	16·41	517·7	57·5	735·1	55·3	W
	19	0	13·59	517·6	56·9	737·1	54·9	B
	20	0	13·57	516·2	56·4	742·8	54·5	B

DECLINATION. Magnet untouched, April 5d—May 28d.

BIFILAR. Observed 2m after the Declination, $k=0{\cdot}000140$. BALANCE. Observed 3m after the Declination, $k=0{\cdot}0000085$.

† Extra Observations made.

April 29d 21h. A small insect was seen creeping over the left cross plate of the balance magnet, it evidently caused a slight irregularity in the motion of the needle.

April 30d 7h. After the observation the case of the balance was removed in order to remove the insect seen at 29d 21h, but no insect could be seen; the balance readings have been slightly unsteady throughout the day (?).

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
3 21 0	25 13·52	513·7	55·9	739·5	54·1	H
22 0	15·24	508·8	55·5	734·9	53·8	B
23 0	16·82	506·2	55·1	728·4	53·7	H
4 0 0	19·61	507·2	54·9	724·7	53·5	B
1 0	20·79	510·0	54·7	726·6	53·6	H
2 0	21·95	515·0	54·5	736·3	53·6	B
3 0	21·24	521·7	54·4	747·7	53·8	B
4 0	21·29	525·0	54·3	748·2	54·0	B
5 0	20·85	528·4	54·2	748·6	53·9	B
6 0	20·16	532·2	54·1	748·4	53·6	W
7 0	19·28	534·5	54·0	745·5	53·3	W
8 0	18·03	529·7	53·9	748·3	53·0	W
9 0	16·92	528·4	53·6	748·3	52·6	W
10 0	17·49	528·0	53·2	745·1	52·3	W
11 0	16·48	524·9	52·9	745·7	52·0	H
12 0	16·23	525·7	52·6	734·1	51·5	H
5 13 0	25 16·48	531·9	55·9	721·3	55·7	B
14 0	17·63	532·8	55·6	719·1	55·4	B
15 0†	24·96	529·9	55·3	685·7	55·0	B
16 0†	12·42	530·8	55·0	666·1	55·0	B
17 0	14·84	525·2	54·8	703·9	54·7	B
18 0	15·65	525·1	54·6	714·6	54·3	B
19 0	16·06	524·1	54·3	719·5	54·0	H
20 0	16·08	522·0	54·1	724·4	53·9	H
21 0	16·53	518·4	54·0	724·6	54·0	W
22 0	19·82	514·5	53·9	726·6	54·4	H
23 0	19·21	516·9	54·0	721·0	55·0	W
6 0 0	23·58	515·2	54·5	720·9	56·4	H
1 0	24·17	524·0	55·5	715·0	58·0	B
2 0	22·91	524·0	56·6	703·7	59·7	H
3 0	21·90	526·9	57·8	697·5	61·0	H
4 0	21·77	514·7	58·9	718·0	62·1	H
5 0	20·11	539·1	59·7	738·7	62·7	H
6 0	19·44	534·0	60·2	767·1	62·8	B
7 0	19·14	529·9	60·7	775·6	63·0	B
8 0	18·77	539·5	60·9	754·7	62·8	B
9 0	18·13	533·3	60·9	742·3	62·5	B
10 0	17·13	532·4	60·9	734·2	62·1	B
11 0	16·48	536·9	60·8	723·9	61·5	W
12 0	11·57	529·6	60·4	715·5	61·0	W
13 0	25 16·33	529·5	60·0	704·6	60·5	W
14 0	15·12	522·9	59·7	710·4	59·9	W
15 0	16·87	524·0	59·4	716·7	59·4	W
16 0	19·79	520·9	59·0	722·4	58·8	W
17 0	17·00	524·3	58·7	727·3	58·4	W
18 0	15·74	524·2	58·4	733·5	58·0	W
19 0	13·57	522·0	58·1	735·3	57·5	B
20 0	13·76	521·2	57·7	739·3	57·0	B
21 0	13·46	517·2	57·3	731·8	56·5	H
22 0	14·50	514·9	56·9	724·9	56·2	B
23 0	18·10	512·2	56·7	720·9	56·3	H
7 0 0	20·16	513·3	56·7	730·0	56·5	B
1 0	22·20	515·2	56·6	728·9	57·2	B
2 0	22·98	521·2	57·0	728·0	58·2	B
3 0	22·33	522·8	57·5	718·7	59·5	H
4 0	20·35	527·2	58·4	734·1	60·8	H

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
7 5 0	25 19·41	529·3	59·3	737·8	61·8	B
6 0	17·96	534·7	60·1	742·7	62·2	W
7 0	17·63	534·9	60·6	742·7	62·2	W
8 0	17·61	536·2	60·9	740·4	62·0	W
9 0	16·12	530·8	60·8	737·8	61·5	W
10 0	16·72	532·1	60·6	728·6	60·6	W
11 0	17·67	531·2	60·2	710·5	59·8	H
12 0	14·33	526·1	59·7	693·3	58·9	H
13 0	25 12·82	520·7	59·0	684·5	57·9	H
14 0	14·37	523·0	58·4	702·6	56·8	H
15 0	14·26	524·6	57·8	692·4	55·7	H
16 0†	18·63	503·6	57·0	721·4	54·8	H
17 0†	27·29	516·6	56·2	652·9	53·9	H
18 0	20·85	529·2	55·4	626·1	52·9	H
19 0	16·70	529·1	54·7	634·1	52·2	W
20 0	12·18	525·8	54·1	665·3	52·0	W
21 0	12·42	514·4	53·8	687·2	52·1	B
22 0	15·01	513·7	53·5	703·3	52·5	W
23 0	17·27	519·7	53·3	697·5	53·2	W
8 0 0	18·32	515·9	53·6	714·9	54·4	W
1 0	21·88	513·6	54·2	728·8	56·2	W
2 0	21·84	513·2	55·1	726·3	57·8	W
3 0	23·98	527·6	56·4	727·3	59·2	W
4 0	22·64	527·6	57·7	723·0	60·5	W
5 0	22·10	541·0	58·7	737·8	61·3	W
6 0	15·96	539·5	59·3	779·6	61·9	W
7 0	16·99	550·3	59·9	778·5	62·0	H
8 0	19·44	538·5	60·1	779·9	61·6	H
9 0	13·93	534·7	60·0	781·0	61·0	H
10 0†	16·84	529·5	59·8	765·8	60·3	H
11 0†	11·57	516·2	59·4	689·1	59·6	B
12 0†	13·43	505·3	59·0	695·9	58·9	B
13 0†	25 19·59	517·6	58·6	593·1	58·1	B
14 0	15·38	527·0	58·0	611·4	57·0	B
15 0†	19·62	519·5	57·3	633·8	56·0	B
16 0†	13·61	517·1	56·7	593·3	54·9	B
17 0	13·52	524·5	55·9	638·0	53·8	B
18 0	14·17	522·4	55·1	654·0	52·7	B
19 0†	10·83	523·0	54·3	669·3	52·2	H
20 0	12·92	518·2	53·8	688·0	52·0	H
21 0	14·80	511·9	53·4	700·2	51·8	W
22 0	18·67	503·7	53·1	719·1	52·2	H
23 0	21·23	511·8	53·0	710·7	52·8	W
9 0 0	22·74	512·0	53·1	703·4	54·0	W
1 0	23·41	516·2	53·8	696·3	55·4	W
2 0	26·03	523·7	54·7	711·5	56·8	W
3 0	23·63	517·8	55·8	726·9	58·3	W
4 0	23·65	532·7	56·9	737·6	59·7	W
5 0	22·60	535·4	58·0	765·1	60·9	W
6 0	20·85	533·0	59·0	783·3	61·5	B
7 0	18·77	534·5	59·5	765·4	61·5	B
8 0	18·77	535·0	59·7	741·5	61·1	B
9 0	18·47	531·9	59·7	735·0	60·7	B
10 0	17·61	527·6	59·5	733·0	60·3	B
11 0	16·38	527·8	59·2	731·0	59·8	W
12 0†	11·57	519·3	59·0	714·3	59·3	W

Declination. Magnet untouched, April 5ᵈ—May 28ᵈ.

Bifilar. Observed 2ᵐ after the Declination, k=0·000140. Balance. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.	Göttingen Mean Time of Declination Obs.	Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°		d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
9 13 0	25 13·84	517·3	58·7	701·1	59·0	W	12 21 0	25 15·41	516·1	56·3	734·7	55·9	H
14 0	15·51	523·4	58·4	710·0	58·7	W	22 0	17·83	514·1	56·1	724·2	56·2	H
15 0	18·63	524·3	58·1	692·3	58·3	W	23 0	21·29	515·2	56·2	707·0	56·8	H
16 0	16·95	525·1	57·9	707·4	57·9	W	13 0 0	22·64	518·8	56·7	696·6	57·6	B
17 0	14·46	524·3	57·7	716·5	57·2	W	1 0	23·41	525·1	57·2	692·7	59·0	B
18 0	14·68	522·7	57·3	724·8	56·5	W	2 0	22·94	528·1	58·1	698·1	60·5	B
19 0	14·91	520·1	56·9	733·5	56·0	B	3 0	21·19	524·4	59·1	705·2	62·1	B
20 0	14·26	518·3	56·5	737·1	55·6	B	4 0	19·12	533·8	60·3	706·6	63·8	H
21 0	14·78	516·8	56·1	733·0	55·1	H	5 0	18·11	533·5	61·7	716·6	65·2	H
22 0	17·07	515·9	55·7	724·4	54·6	B	6 0	18·13	537·4	62·9	725·6	66·0	W
23 0	18·63	515·1	55·2	721·0	54·3	H	7 0	18·05	537·2	63·8	730·4	66·4	W
10 0 0	20·25	518·4	54·9	715·7	54·0	B	8 0	18·14	534·3	64·1	728·9	66·3	W
1 0	21·70	522·2	54·6	713·3	54·0	H	9 0	18·03	534·3	64·2	723·2	65·8	W
2 0	21·86	522·9	54·3	717·4	54·0	B	10 0	17·33	529·0	64·1	724·6	65·3	W
3 0	22·30	536·3	54·2	724·4	54·1	B	11 0	15·81	529·0	63·9	722·3	64·8	H
4 0	21·77	533·3	54·1	736·2	54·0	B	12 0	16·28	527·7	63·6	716·3	64·3	H
5 0	20·52	529·9	54·1	755·7	54·1	H							
6 0	18·27	532·2	54·0	759·9	54·0	W	13 0	25 16·84	527·8	63·3	712·9	63·8	H
7 0	19·31	535·9	53·9	741·6	53·6	W	14 0	16·66	528·0	63·0	712·2	63·3	H
8 0	18·88	533·8	53·8	738·4	53·3	W	15 0	16·12	528·4	62·7	711·4	62·7	H
9 0	18·34	532·1	53·6	736·0	53·0	W	16 0	15·98	528·1	62·3	713·7	62·3	H
10 0	18·10	531·0	53·3	735·7	52·8	W	17 0	12·04	526·4	61·9	709·3	61·8	H
11 0	17·83	530·6	53·1	732·8	52·5	H	18 0	14·20	532·6	61·8	702·4	61·3	H
12 0	17·94	526·7	53·0	732·8	52·3	H	19 0	10·87	531·8	61·6	698·9	61·0	W
							20 0†	08·68	528·2	61·3	696·4	60·7	W
13 0	25 17·49	526·9	52·8	733·4	52·2	H	21 0†	12·09	515·9	61·0	690·7	60·4	B
14 0	17·09	526·6	52·6	732·4	52·0	H	22 0†	12·78	512·9	60·7	691·5	59·9	W
15 0	17·02	526·2	52·4	731·7	52·0	H	23 0†	18·81	503·4	60·3	687·2	59·4	W
16 0	17·71	521·0	52·3	728·0	51·9	H	14 0 0	24·55	509·1	60·0	693·4	59·0	W
17 0	13·46	522·4	52·2	727·5	51·7	H	1 0	24·25	527·5	59·7	689·9	58·9	W
18 0	12·62	522·4	52·1	735·5	51·6	H	2 0	26·16	514·1	59·5	694·9	58·9	W
19 9	13·94	520·8	51·9	739·1	51·3	W	3 0	25·24	522·8	59·4	710·2	59·0	W
20 0	14·46	520·2	51·8	739·9	51·2	W	4 0	22·75	526·2	59·3	720·9	59·3	W
21 0	15·65	517·0	51·7	738·4	51·1	B	5 0	20·02	535·5	59·5	727·1	59·6	W
22 0	18·20	511·4	51·6	736·0	51·2	W	6 0	18·52	536·2	59·7	728·1	59·8	D
23 0	19·51	511·0	51·6	726·5	51·4	W	7 0	17·91	535·2	59·8	725·1	59·8	D
11 0 0	21·09	513·1	51·6	718·0	51·6	W	8 0	17·29	535·9	59·9	723·6	59·5	D
1 0	23·24	520·6	51·7	711·3	51·8	W	9 0	17·53	532·7	59·7	719·2	58·9	D
2 0	22·27	522·0	51·8	717·2	52·0	W	10 0	17·02	530·4	59·3	720·9	58·2	H
3 0	20·80	523·3	51·9	731·4	52·3	W	11 0	16·38	530·6	58·9	723·4	57·5	B
4 0	18·88	521·8	52·0	739·8	52·6	W	12 0	14·03	527·7	58·5	706·5	57·0	B
5 0	17·70	530·4	52·2	745·2	52·9	W							
6 0	17·78	535·2	52·3	748·1	53·2	H	13 0	25 15·51	527·1	58·0	709·0	56·4	B
7 0	17·51	536·3	52·5	750·3	53·2	H	14 0†	15·89	517·2	57·5	613·1	55·8	B
8 0	14·53	537·0	52·7	749·8	53·2	H	15 0†	01·02	522·1	57·0	527·9	55·5	B
9 0	16·18	531·7	52·8	750·7	53·3	H	16 0†	11·34	496·8	56·7	545·3	55·2	B
10 0	16·28	529·1	52·8	742·0	53·3	H	17 0†	16·28	521·2	56·3	604·3	54·9	B
11 0	15·88	531·4	52·8	735·8	53·3	B	18 0	13·46	526·3	55·9	658·1	54·4	B
12 0	15·69	527·0	52·8	729·5	53·2	B	19 0	14·04	528·0	55·5	675·3	54·1	H
							20 0	14·82	522·2	55·1	677·2	54·0	H
12 13 0	25 13·36	525·5	59·8	711·2	60·0	W	21 0	14·48	521·4	55·0	687·2	54·0	W
14 0	15·47	527·4	59·4	712·0	59·3	W	22 0	13·84	519·3	54·9	690·4	54·1	H
15 0	15·74	527·3	59·0	714·9	58·7	W	23 0	17·63	517·4	54·8	688·8	54·6	H
16 0	16·38	527·7	58·5	718·2	58·0	W	15 0 0	20·15	517·3	54·9	693·8	55·5	H
17 0	15·14	524·5	58·0	724·1	57·2	W	1 0	22·30	519·2	55·3	697·7	56·4	H
18 0	13·64	521·7	57·5	730·2	56·5	W	2 0	22·74	528·5	55·9	696·2	57·3	H
19 0	13·96	521·8	57·1	728·4	55·9	B	3 0	22·20	527·6	56·5	707·6	58·3	H
20 0	13·64	517·3	56·7	725·9	55·7	B	4 0	22·20	525·8	57·2	714·9	59·4	H

DECLINATION. Magnet untouched, April 5d—May 28d.

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs. d.	h.	m.	Declination. °	′	Bifilar. Corrected. Sc. Div.	Bifilar. Thermometer. °	Balance. Corrected. Mic. Div.	Balance. Thermometer. °	Observer's Initial.
15	5	0	25	20·62	540·2	58·2	711·2	60·2	H
	6	0		18·77	531·9	59·1	730·7	61·0	W
	7	0		18·16	532·0	59·8	731·8	61·3	B
	8	0		18·08	535·1	60·3	720·5	61·7	B
	9	0		16·65	536·3	60·8	715·5	61·5	B
	10	0†		16·90	542·5	60·7	701·8	60·9	B
	11	0		16·12	530·2	60·3	676·7	60·0	W
	12	0		15·94	534·1	59·7	665·6	59·0	W
	13	0	25	14·89	526·9	59·0	653·7	58·0	W
	14	0		13·12	523·6	58·4	663·7	57·0	W
	15	0		15·98	522·8	57·8	681·9	55·9	W
	16	0		16·75	523·2	57·0	692·4	54·9	W
	17	0		19·26	521·2	56·2	695·5	53·8	W
	18	0		16·08	524·3	55·5	694·6	52·8	W
	19	0		14·82	523·7	54·8	708·6	52·1	B
	20	0		13·49	518·7	54·1	717·8	51·8	B
	21	0		12·80	516·7	53·6	720·0	51·7	H
	22	0		12·89	512·9	53·3	727·9	52·1	B
	23	0		18·63	511·0	53·2	718·2	53·2	H
16	0	0		21·46	517·1	53·4	714·9	54·3	H
	1	0		22·99	520·9	54·0	718·0	55·5	H
	2	0		23·54	524·4	55·0	726·7	56·9	B
	3	0		23·63	523·8	56·0	722·4	58·3	H
	4	0		21·53	531·7	57·1	726·0	59·8	W
	5	0		19·42	532·5	58·3	725·1	60·9	B
	6	0		18·45	539·6	59·1	731·4	61·6	W
	7	0		18·81	535·4	59·9	729·4	62·0	W
	8	0		18·03	537·0	60·3	726·9	62·0	W
	9	0		17·19	533·6	60·6	723·4	61·5	W
	10	0		17·06	532·7	60·3	715·2	60·8	W
	11	0		16·60	530·3	60·0	712·4	60·3	H
	12	0		16·86	529·8	59·8	710·6	60·0	H
	13	0	25	17·12	528·5	59·5	707·2	59·5	H
	14	0		17·60	528·1	59·1	707·7	59·0	H
	15	0		18·05	526·2	58·8	707·2	58·2	H
	16	0		17·49	525·4	58·3	708·9	57·4	H
	17	0		17·12	522·4	57·8	709·3	56·2	H
	18	0		14·85	524·4	57·1	708·3	55·1	H
	19	0		13·49	520·4	56·3	712·3	53·9	W
	20	0		13·49	519·4	55·6	701·4	53·0	W
	21	0		13·32	514·9	54·9	701·3	52·3	B
	22	0		14·08	514·1	54·3	693·7	51·9	W
	23	0		16·28	516·1	53·9	689·4	51·8	W
17	0	0		19·51	514·5	53·6	701·5	51·9	W
	1	0		22·13	516·9	53·3	708·1	51·9	B
	2	0		22·33	522·9	53·0	709·8	52·0	W
	3	0		21·73	523·8	52·9	719·9	52·0	W
	4	0		21·07	526·9	52·8	725·6	51·9	W
	5	0		19·79	530·4	52·6	729·0	51·6	W
	6	0		18·87	532·0	52·3	731·6	51·4	H
	7	0		18·58	535·2	52·1	727·6	50·9	H
	8	0		18·20	533·6	51·8	726·7	50·3	H
	9	0		17·67	532·7	51·4	730·2	49·7	B
	10	0		17·49	530·1	50·9	722·2	49·0	H
	11	0		17·49	530·2	50·5	721·4	48·1	B
	12	0		17·76	529·3	49·9	719·8	47·3	B
17	13	0†	25	12·06	525·3	49·3	714·4	46·5	B
	14	0		14·31	527·0	48·6	715·7	46·0	B
	15	0		15·86	525·8	47·9	715·3	45·1	B
	16	0		16·25	524·6	47·3	718·8	44·4	B
	17	0		15·58	522·8	46·7	727·7	43·8	B
	18	0		14·65	522·6	46·1	728·1	43·3	B
	19	0		14·04	523·3	45·5	732·4	43·2	H
	20	0		13·72	522·0	45·1	733·4	43·2	H
	21	0		16·52	520·3	45·0	735·6	43·3	W
	22	0		15·81	521·8	44·8	731·1	43·6	H
	23	0		17·20	522·2	44·7	722·3	44·2	H
18	0	0		18·87	520·7	44·8	720·8	44·9	H
	1	0		21·46	521·4	45·0	714·4	45·5	H
	2	0		21·30	523·9	45·5	719·1	46·2	H
	3	0		20·05	527·3	46·0	724·5	47·0	H
	4	0		20·35	532·9	46·5	728·2	47·6	H
	5	0		20·05	539·1	46·9	731·4	48·2	H
	6	0		20·05	543·3	47·3	720·9	48·5	B
	7	0		18·35	546·1	47·7	720·2	48·7	B
	8	0		18·82	535·2	47·9	725·6	48·7	B
	9	0		18·10	536·6	48·0	718·3	48·3	B
	10	0		17·94	535·5	47·9	712·6	47·8	B
	11	0		17·87	535·0	47·7	712·6	47·3	W
	12	0		17·47	533·2	47·3	709·1	46·8	W
19	13	0	25	16·72	530·9	48·0	707·1	47·5	H
	14	0		16·63	528·9	47·8	708·3	47·4	H
	15	0		16·19	529·3	47·5	711·3	47·2	H
	16	0		16·08	528·3	47·3	711·3	46·9	H
	17	0		15·22	528·0	47·1	717·4	46·7	H
	18	0		13·83	527·6	46·9	716·8	46·5	H
	19	0		13·77	525·0	46·8	712·3	46·2	W
	20	0		14·67	527·2	46·7	706·7	46·2	W
	21	0		13·59	526·4	46·6	708·1	46·5	B
	22	0		14·84	520·8	46·7	708·3	46·9	W
	23	0		18·84	521·4	46·9	706·0	47·5	W
20	0	0		20·63	521·5	47·2	703·4	48·2	W
	1	0		22·00	523·1	47·7	699·3	49·0	B
	2	0		21·46	530·5	48·2	699·6	49·9	W
	3	0		20·89	534·8	48·9	702·6	50·8	W
	4	0		20·85	535·4	49·7	694·0	51·5	W
	5	0		19·89	536·9	50·2	697·9	52·2	W
	6	0		20·00	540·1	50·7	707·3	52·5	H
	7	0		19·51	541·9	51·2	708·8	52·9	H
	8	0		19·81	541·9	51·7	704·3	53·2	W
	9	0		18·84	538·6	51·9	701·1	53·1	H
	10	0		18·16	540·9	51·9	695·9	52·5	H
	11	0		17·53	539·5	51·8	693·1	52·0	B
	12	0		16·95	538·4	51·5	692·5	51·5	B
	13	0	25	16·92	536·7	51·2	691·6	51·0	B
	14	0		16·25	536·1	50·9	691·3	50·5	B
	15	0		16·12	534·7	50·6	695·0	50·0	B
	16	0		15·29	533·4	50·3	697·8	49·6	B
	17	0		14·26	531·4	50·0	705·1	49·3	B
	18	0		13·27	530·4	49·8	704·9	49·1	B
	19	0		12·35	528·9	49·5	702·1	49·0	H
	20	0		11·82	524·4	49·3	702·2	49·0	H

Declination. Magnet untouched, April 5ᵈ—May 28ᵈ.

Bifilar. Observed 2ᵐ after the Declination, $k=0·000140$. Balance. Observed 3ᵐ after the Declination, $k=0·0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs. d.	h.	m.	DECLINATION. °	′	BIFILAR. Corrected. Sc. Div.	BIFILAR. Thermometer. °	BALANCE. Corrected. Mic. Div.	BALANCE. Thermometer. °	Observer's Initial.
20	21	0	25	12·65	522·8	49·2	702·8	49·0	W
	22	0		15·41	522·8	49·1	687·2	49·4	H
	23	0		18·70	520·4	49·3	680·9	49·8	H
21	0	0		21·39	525·3	49·6	684·6	50·4	H
	1	0		23·31	524·4	50·0	691·1	51·2	H
	2	0		22·42	527·4	50·4	687·5	51·9	H
	3	0		22·24	528·7	50·9	693·7	52·5	H
	4	0		22·10	528·7	51·3	699·3	53·0	H
	5	0		22·06	539·2	51·7	701·2	53·5	H
	6	0		20·85	544·5	52·1	705·0	53·9	B
	7	0		20·85	545·3	52·6	711·9	54·2	B
	8	0		21·81	548·4	53·0	715·5	54·5	B
	9	0		18·37	540·6	53·2	724·7	54·3	B
	10	0		18·67	534·4	53·2	717·1	53·8	B
	11	0		19·49	536·2	53·0	707·9	53·3	W
	12	0†		02·59	525·3	52·8	673·5	52·7	W
	13	0†	25	09·64	522·7	52·6	656·1	52·4	W
	14	0		12·02	526·5	52·2	666·7	51·9	W
	15	0		13·59	527·8	51·8	677·1	51·1	W
	16	0		15·41	525·9	51·4	687·3	50·4	W
	17	0		13·16	526·0	50·9	691·9	49·7	W
	18	0		13·77	525·2	50·6	699·1	49·5	W
	19	0		14·17	522·3	50·4	714·4	49·5	B
	20	0		13·52	522·6	50·3	708·4	49·8	B
	21	0		12·78	523·5	50·2	697·7	50·2	H
	22	0		13·39	522·4	50·2	696·7	50·6	H
	23	0		14·53	521·3	50·5	690·2	51·2	H
22	0	0		20·25	514·4	50·8	692·1	51·8	H
	1	0		22·44	513·8	51·0	695·1	52·3	H
	2	0		25·58	518·3	51·5	693·0	52·9	H
	3	0		25·49	533·6	52·1	693·2	53·5	B
	4	0		26·43	519·5	52·7	708·6	54·3	B
	5	0†		25·70	550·1	53·3	692·3	55·0	B
	6	0†		23·68	546·0	53·9	697·7	55·6	B
	7	0		21·56	552·2	54·6	703·0	56·0	B
	8	0		19·73	545·9	55·1	722·5	56·4	D
	9	0†		08·29	538·7	55·7	743·8	56·8	D
	10	0†		09·74	540·6	55·7	724·2	56·4	D
	11	0†		14·67	525·9	55·8	705·1	56·0	H
	12	0†		15·99	520·2	55·4	649·8	55·5	H
	13	0†	25	01·09	522·0	55·0	445·8	54·9	H
	14	0†		00·00	523·1	54·5	530·0	54·3	H
	15	0†		15·04	514·5	54·0	622·8	53·4	H
	16	0†		16·15	526·5	53·4	647·3	52·5	H
	17	0†		27·58	487·1	52·9	574·3	51·2	H
	18	0†		25·04	518·8	52·4	563·7	50·8	H
	19	0†		15·92	513·7	52·1	627·5	50·5	B
	20	0		13·37	505·8	51·8	663·3	50·5	B
	21	0		17·46	505·8	51·6	669·0	50·7	B
	22	0		17·17	513·6	51·4	674·1	51·1	B
	23	0		21·17	506·4	51·6	677·3	51·9	B
23	0	0		22·50	515·3	51·9	691·5	52·9	B
	1	0		23·93	525·0	52·3	697·3	54·2	H
	2	0		26·38	523·7	53·1	696·9	55·4	H
	3	0		26·10	531·4	54·0	690·0	56·3	B
	4	0		20·25	543·3	54·9	700·9	57·2	B

Göttingen Mean Time of Declination Obs. d.	h.	m.	DECLINATION. °	′	BIFILAR. Corrected. Sc. Div.	BIFILAR. Thermometer. °	BALANCE. Corrected. Mic. Div.	BALANCE. Thermometer. °	Observer's Initial.
23	5	0	25	21·77	537·4	55·8	713·2	58·1	B
	6	0		19·69	542·6	56·4	724·4	58·6	H
	7	0†		19·44	550·6	57·0	725·2	58·6	H
	8	0†		15·44	550·5	57·1	716·5	58·6	H
	9	0		16·89	534·6	57·2	710·6	58·1	H
	10	0		17·60	530·7	57·2	701·2	57·4	H
	11	0†		15·54	531·8	56·8	698·0	56·6	B
	12	0†		12·72	531·8	56·4	691·5	56·1	B
	13	0	25	13·50	521·9	56·0	706·3	55·6	B
	14	0		17·10	520·4	55·6	697·8	55·0	B
	15	0		17·37	522·4	55·1	700·2	54·5	B
	16	0		16·01	525·0	54·7	702·8	53·7	B
	17	0		14·01	524·2	54·3	711·1	53·0	B
	18	0		13·19	523·8	53·9	714·6	52·5	B
	19	0		12·23	524·1	53·4	711·0	52·2	H
	20	0		12·11	522·2	53·0	711·4	51·9	H
	21	0		15·34	512·8	52·8	715·4	51·9	H
	22	0		15·52	512·4	52·6	711·0	52·1	H
	23	0		19·02	513·2	52·6	709·1	52·4	H
24	0	0		19·64	515·5	52·7	698·7	52·7	H
	1	0		20·42	522·7	52·9	705·5	53·6	H
	2	0		18·97	524·4	53·3	714·4	54·5	H
	3	0		19·62	534·8	53·8	716·1	55·7	H
	4	0		20·79	534·1	54·5	718·4	56·5	H
	5	0†		17·36	546·8	55·3	708·6	57·2	H
	6	0		18·13	551·4	56·1	721·6	58·0	W
	7	0		18·30	543·2	56·9	724·4	58·4	B
	8	0		17·49	541·6	57·5	731·9	58·7	B
	9	0		18·16	538·6	57·8	729·6	58·5	B
	10	0		19·48	534·0	57·9	694·1	58·1	B
	11	0		14·75	532·1	57·7	685·2	57·7	B
	12	0		16·97	524·3	57·3	686·2	57·3	B
	13	0	25	15·42	528·8	57·0	659·9	56·8	B
	14	0		14·73	521·2	56·7	667·4	56·3	D
	15	0		16·13	521·6	56·3	655·4	55·8	D
	16	0		16·53	524·5	56·1	665·1	55·6	D
	17	0		14·40	524·8	55·8	677·8	55·4	D
	18	0		13·56	522·6	55·5	693·7	55·0	W
	19	0		13·07	519·8	55·1	704·1	54·5	W
	20	0		12·90	516·7	54·8	708·8	54·2	W
	21	0		12·83	516·1	54·6	707·2	54·2	H
	22	0		14·98	516·2	54·5	699·2	54·0	H
	23	0		16·28	514·0	54·4	699·0	54·5	H
25	0	0		19·44	522·8	54·5	690·7	55·2	H
	1	0		21·37	529·6	54·8	689·0	56·0	B
	2	0		20·35	534·0	55·3	696·2	56·7	B
	3	0		21·84	534·8	55·8	701·6	57·5	B
	4	0		20·35	534·4	56·5	707·9	58·4	D
	5	0		19·89	536·0	57·1	712·1	58·9	D
	6	0		19·39	538·4	57·7	711·1	59·2	H
	7	0		18·84	540·8	58·0	705·3	59·2	H
	8	0		19·01	544·0	58·1	712·3	58·8	W
	9	0		04·82	549·1	57·9	714·7	58·0	W
	10	0		16·25	533·3	57·5	703·5	56·8	W
	11	0		17·60	530·6	56·9	696·1	55·8	H
	12	0		17·15	530·0	56·2	700·4	55·0	H

DECLINATION. Magnet untouched, April 5ᵈ—May 28ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, $k=0·000140$. BALANCE. Observed 3ᵐ after the Declination, $k=0·0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
26	13	0	25 14·17	525·4	53·0	682·4	52·0	B
	14	0	14·53	526·2	52·6	681·6	51·2	B
	15	0	16·72	529·9	52·2	668·7	50·7	B
	16	0	14·44	525·0	51·8	669·9	50·4	B
	17	0	13·19	528·8	51·4	670·6	50·1	B
	18	0	13·96	525·9	51·1	675·3	49·9	B
	19	0	14·23	515·1	50·9	691·3	49·9	H
	20	0	15·83	519·6	50·8	680·8	50·0	H
	21	0	14·38	520·6	50·7	682·9	50·2	W
	22	0	15·54	516·7	50·6	668·8	50·5	H
	23	0	16·62	511·3	50·7	652·2	50·8	W
27	0	0	18·23	515·2	50·9	655·2	51·4	H
	1	0	19·81	526·7	51·2	661·6	52·2	H
	2	0	21·93	525·1	51·6	676·5	53·0	H
	3	0	22·64	530·9	52·1	680·7	53·5	H
	4	0	19·78	534·5	52·6	688·3	54·1	H
	5	0	19·34	537·6	53·1	696·0	54·5	W
	6	0	18·08	541·7	53·6	705·0	55·0	B
	7	0	18·94	547·2	54·0	706·5	55·3	B
	8	0†	10·11	547·8	54·4	716·8	55·5	B
	9	0	15·38	536·9	54·7	716·8	55·4	B
	10	0	13·96	531·4	54·7	710·9	54·9	B
	11	0	12·51	524·2	54·2	697·7	54·0	W
	12	0	13·67	528·0	53·8	686·7	53·0	W
	13	0	25 13·32	530·7	53·3	680·3	52·4	W
	14	0	13·96	530·1	52·9	670·2	51·7	W
	15	0	10·31	526·4	52·4	661·0	51·0	W
	16	0	12·00	527·9	52·0	667·5	50·5	W
	17	0	12·70	520·5	51·6	679·8	50·0	W
	18	0	14·78	524·6	51·1	688·8	49·6	W
	19	0	14·26	527·0	50·8	687·2	49·4	B
	20	0	13·46	521·5	50·5	690·4	49·2	B
	21	0	16·87	517·3	50·2	686·9	49·2	H
	22	0	19·24	516·2	50·0	687·1	49·5	H
	23	0	21·98	515·4	50·0	681·0	50·0	H
28	0	0	23·09	518·2	50·3	674·1	50·5	B
	1	0	22·61	518·8	50·6	686·1	51·0	B
	2	0	22·16	527·9	50·9	687·2	51·3	H
	3	0	21·54	534·0	51·2	691·9	52·0	H
	4	7	19·23	532·4	51·5	702·0	52·2	W
	5	0	18·67	535·4	51·8	703·8	52·6	H
	6	0	16·62	537·0	52·0	707·0	53·0	W
	7	0	16·32	543·0	52·4	705·1	53·5	W
	8	0	16·07	540·5	52·8	709·1	53·8	W
	9	0†	12·56	545·5	53·0	712·7	54·0	W
	10	0	14·10	534·6	53·0	702·1	53·5	W
	11	0	14·92	534·5	53·0	685·1	53·1	H
	12	0	14·73	529·1	52·8	689·1	52·7	H
	13	0	25 15·56	529·3	52·5	693·1	52·4	H
	14	0	15·52	529·0	52·2	694·3	52·0	H
	15	0	15·26	528·5	52·0	690·6	51·5	H
	16	0	15·75	527·8	51·7	696·4	51·1	H
	17	0	14·68	525·8	51·4	695·8	50·7	H
	18	0	14·17	524·9	51·1	698·5	50·3	H
	19	13	12·90	523·3	50·8	700·7	49·9	W
	20	0	12·88	522·7	50·7	696·7	49·7	W

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
28	21	0	25 13·20	519·2	50·5	697·8	49·7	B
	22	0	13·05	516·0	50·3	692·2	49·8	W
	23	0	16·75	515·2	50·2	697·6	50·0	W
29	0	0	19·31	519·2	50·3	686·9	50·4	W
	1	0	21·97	524·2	50·6	673·9	50·9	B
	2	0	22·95	529·4	50·9	682·7	51·6	B
	3	0	21·75	527·2	51·3	685·8	52·3	W
	4	0	20·12	529·9	51·7	690·4	52·9	W
	5	0	19·16	531·3	52·1	696·7	53·3	W
	6	0	17·92	535·3	52·4	696·5	53·4	H
	7	0	16·52	537·0	52·5	698·3	53·4	H
	8	0	15·93	540·7	52·6	700·4	53·2	H
	9	0	11·47	541·5	52·5	707·9	52·8	H
	10	0	13·83	533·4	52·3	705·5	52·5	H
	11	0	12·78	530·1	52·2	700·5	52·1	B
	12	0	15·01	531·2	52·0	694·3	51·8	B
	13	0	25 14·21	530·8	51·8	690·3	51·5	B
	14	0	13·03	531·0	51·6	686·4	51·1	B
	15	0	12·11	529·0	51·3	685·5	50·7	B
	16	0	12·78	525·3	51·0	689·1	50·3	B
	17	0	11·98	524·5	50·8	695·0	50·0	B
	18	0	12·01	523·4	50·6	695·1	49·7	B
	19	10	12·82	521·3	50·3	690·9	49·6	H
	20	0	16·66	517·8	50·1	692·5	49·6	H
	21	0	16·16	513·9	50·0	692·3	49·8	W
	22	0	15·39	518·5	50·0	681·5	50·0	H
	23	0	15·64	519·3	50·1	685·4	50·6	H
30	0	0	18·50	518·5	50·4	680·6	51·2	H
	1	0	20·16	525·5	50·7	685·1	51·7	H
	2	0	21·46	527·3	51·0	691·3	52·2	H
	3	0	20·85	531·3	51·5	693·8	52·9	H
	4	0	20·05	531·9	52·0	700·2	53·5	H
	5	0	18·32	535·7	52·4	701·4	53·9	H
	6	0	18·40	536·9	52·7	694·7	53·9	B
	7	0	18·05	537·9	52·9	689·6	54·1	B
	8	0	16·99	537·1	53·1	696·8	54·4	B
	9	0	16·26	535·8	53·3	699·1	54·3	B
	10	0	16·08	533·5	53·3	700·9	54·0	B
	11	0	15·52	531·1	53·1	699·7	53·5	W
	12	0	15·51	532·3	53·0	696·2	53·0	W
	13	0	25 15·62	531·7	52·8	696·2	52·7	W
	14	0	15·67	531·1	52·5	697·3	52·3	W
	15	0	15·51	529·8	52·2	697·0	51·8	W
	16	0	14·87	527·6	51·9	699·6	51·4	W
	17	0	14·46	526·6	51·7	701·5	51·0	W
	18	0	12·56	524·6	51·5	701·9	50·6	W
	19	0	11·75	523·7	51·2	701·1	50·4	B
	20	0	12·53	524·3	51·0	697·9	50·2	B
	21	5	12·42	520·3	50·8	703·7	50·2	H
	22	0	14·77	519·8	50·7	704·0	50·4	H
	23	0	16·77	520·3	50·7	693·8	50·6	H
31	0	0	19·86	524·1	50·8	684·9	51·0	H
	1	0	22·20	530·3	50·9	687·6	51·6	H
	2	0	23·07	535·5	51·3	693·8	52·2	B
	3	0	23·41	538·2	51·8	693·1	52·8	B
	4	0	22·31	538·8	52·2	691·8	53·5	W

DECLINATION. Torsion removed,—May 28ᵈ 0ʰ, 0°—29ᵈ 23ʰ, + 8½°. Effect of + 10° of Torsion = − 0′·84.
BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.
May 27ᵈ 11ʰ, *et seq.* The declination slightly disturbed.
May 28ᵈ 1ʰ—29ᵈ 9ʰ. The magnet with short scale used in the declinometer.
May 29ᵈ 9ʰ + Deflecting bar vibrated in the declinometer box.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
31	5	0	25	20·50	539·6	52·7	694·2	54·0	B
	6	0		18·58	539·3	53·0	694·5	54·2	W
	7	0		18·08	544·8	53·1	692·5	54·2	W
	8	0		17·44	542·8	53·2	703·2	54·0	W
	9	0		16·60	536·0	53·1	710·2	53·7	W
	10	0		17·46	536·6	53·0	710·4	53·4	W
	11	0		15·44	534·2	52·9	702·2	53·1	H
	12	0		15·58	536·7	52·7	699·3	52·8	H
	13	0	25	15·05	535·6	52·5	696·4	52·5	H
	14	0		14·85	533·7	52·3	693·4	52·2	H
	15	0		13·36	533·7	52·1	692·5	51·9	H
	16	0		13·46	533·5	52·0	695·9	51·5	H
	17	0		12·60	531·3	51·8	700·6	51·1	H
	18	0		12·23	526·3	51·4	699·9	50·7	H
	19	0		13·14	524·0	51·1	695·0	50·4	W
	20	0		12·85	520·5	50·9	694·4	50·2	W
	21	0		13·57	517·3	50·8	699·1	50·2	B
	22	0		14·68	518·6	50·7	685·0	50·4	W
	23	0		16·89	518·1	50·8	678·6	51·0	W
1	0	0		20·06	521·1	51·0	673·9	52·0	W
	1	0		23·48	528·6	51·7	668·8	53·0	B
	2	0		25·47	534·3	52·4	675·9	54·2	W
	3	0		22·64	540·8	53·3	679·6	55·4	W
	4	0		19·44	541·0	54·2	683·3	56·5	W
	5	0		17·29	539·8	55·0	688·0	57·1	W
	6	0		16·60	544·0	55·7	689·9	57·6	H
	7	0		16·59	537·5	56·2	697·1	57·9	H
	8	0		17·63	539·7	56·5	689·2	57·5	H
	9	0		17·47	541·2	56·3	686·9	57·0	H
	10	0		18·03	543·3	56·0	688·7	56·3	H
	11	0†		11·15	541·1	55·7	688·6	55·7	B
	12	0		12·75	540·1	55·4	689·4	55·5	B
2	13	0	25	16·38	529·5	52·8	698·3	51·7	W
	14	0		15·98	529·8	52·4	705·8	51·4	W
	15	0†		13·83	529·5	52·0	710·9	51·0	W
	16	0		17·49	524·2	51·8	710·0	50·7	W
	17	0		15·99	530·6	51·6	694·3	50·4	W
	18	0		12·96	528·4	51·3	701·7	50·3	W
	19	0		13·76	526·7	51·2	709·1	50·5	B
	20	0		13·46	525·2	51·1	710·0	50·7	B
	21	0		12·75	521·0	51·1	708·6	51·3	H
	22	0		12·78	519·9	51·3	701·2	51·9	B
	23	0		14·37	517·2	51·8	701·9	52·9	H
3	0	0		17·67	516·3	52·3	694·0	53·9	H
	1	0		21·56	519·2	53·0	698·0	55·1	H
	2	0		21·86	531·9	53·9	694·0	56·3	B
	3	0		22·42	534·0	54·9	698·8	57·8	H
	4	0		21·09	541·1	56·2	701·0	59·4	W
	5	0		19·28	537·6	57·6	715·4	60·7	B
	6	0		18·10	541·3	58·7	715·2	61·5	W
	7	0		17·56	535·6	59·3	713·8	61·8	W
	8	0		17·06	539·0	59·7	708·9	61·8	W
	9	0		16·68	535·3	59·9	711·9	61·8	W
	10	0		16·01	534·9	59·9	703·9	61·0	W
	11	0		16·05	534·2	59·6	699·2	60·3	H
	12	0		15·78	533·3	59·2	698·7	59·7	H
3	13	0	25	15·91	534·5	58·8	694·5	58·8	H
	14	0		15·69	531·6	58·3	696·5	58·0	H
	15	0		15·67	530·4	57·8	700·8	57·2	H
	16	0		14·80	529·4	57·2	706·1	56·2	H
	17	0		14·11	529·3	56·6	709·7	55·4	H
	18	0		13·69	529·0	56·1	711·0	54·7	H
	19	0		13·86	529·3	55·5	709·6	54·2	W
	20	0		14·58	528·4	55·0	708·7	54·0	W
	21	0		14·23	523·1	54·8	709·9	54·0	B
	22	0		15·54	520·4	54·6	688·1	54·0	W
	23	0		14·94	521·7	54·6	678·2	54·5	W
4	0	0		17·67	523·9	54·7	684·3	55·0	W
	1	0		20·16	530·0	55·0	690·7	56·2	H
	2	0		21·76	336·1	55·8	690·6	57·4	W
	3	0		21·06	533·2	56·8	694·1	58·8	W
	4	0		22·10	534·1	57·8	696·9	59·9	W
	5	0		19·91	537·3	58·6	699·5	60·5	W
	6	0		19·02	537·1	59·0	702·9	60·7	W
	7	0		17·67	538·4	59·3	706·0	60·7	W
	8	0		17·54	538·3	59·3	702·5	60·6	H
	9	0		17·49	539·0	59·4	702·1	60·4	H
	10	0		15·52	533·4	59·4	703·9	60·0	H
	11	0		15·81	532·3	59·3	699·6	59·6	B
	12	0		16·38	532·6	59·0	695·8	59·2	B
	13	0	25	16·41	532·1	58·8	694·2	58·8	B
	14	0		16·21	531·4	58·5	696·2	58·4	B
	15	0		16·18	530·7	58·2	699·8	58·0	B
	16	0		15·58	529·6	57·9	705·7	57·6	B
	17	0		14·62	530·0	57·7	708·3	57·3	B
	18	0		12·38	530·0	57·5	709·8	57·0	B
	19	0		11·95	528·3	57·2	709·1	56·9	H
	20	0		12·11	527·6	57·0	710·6	56·8	H
	21	0		13·43	521·0	56·9	714·7	56·8	W
	22	0		13·43	516·8	56·9	707·3	56·9	H
	23	0		15·85	513·6	56·8	700·9	57·1	H
5	0	0		18·99	518·2	56·9	695·9	57·4	H
	1	0		21·93	520·6	57·0	698·3	57·9	H
	2	0		23·02	527·5	57·3	691·8	58·4	H
	3	0		23·88	532·6	57·7	700·0	58·9	H
	4	0		22·71	537·6	58·0	706·0	59·2	H
	5	0		20·18	543·4	58·4	705·4	59·5	W
	6	0		18·03	541·5	58·8	702·6	59·7	B
	7	0		16·82	541·3	59·0	704·3	59·9	B
	8	0		16·90	537·7	59·2	706·2	60·0	B
	9	0		16·75	535·2	59·3	703·4	60·0	B
	10	0		16·15	536·1	59·3	702·1	60·0	B
	11	0		16·30	537·5	59·3	700·0	59·9	W
	12	0		16·28	533·4	59·2	698·9	59·7	W
	13	0	25	16·46	531·0	59·1	698·5	59·5	W
	14	0		16·16	530·7	59·0	698·6	59·3	W
	15	0		16·06	531·0	58·9	697·8	59·0	W
	16	0		14·82	530·9	58·7	701·3	58·7	W
	17	0		13·77	531·2	58·5	704·2	58·5	W
	18	0		11·95	528·5	58·3	705·7	58·3	W
	19	0		11·19	529·7	58·2	701·9	58·2	B
	20	0		11·17	528·8	58·1	703·2	58·2	B

DECLINATION. Magnet untouched, May 29ᵈ—Aug. 4ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, $k = 0{\cdot}000140$. BALANCE. Observed 3ᵐ after the Declination $k = 0{\cdot}0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
5	21	0	25	10·87	525·6	58·1	704·9	58·4	H
	22	0		14·43	519·4	58·1	706·0	58·6	B
	23	0		16·95	517·7	58·4	704·0	59·5	H
6	0	0		20·29	521·5	59·0	695·7	60·5	B
	1	0		22·62	522·4	59·7	687·1	61·8	H
	2	0		23·36	528·3	60·4	668·5	63·0	H
	3	0		22·78	530·6	61·4	670·2	63·7	B
	4	0		20·82	533·9	62·1	681·6	64·5	H
	5	0		19·44	533·4	62·8	698·5	65·2	H
	6	0		17·83	541·6	63·6	707·3	65·9	W
	7	2		16·93	543·4	64·2	709·0	66·5	W
	8	0		16·93	541·3	64·8	708·6	66·8	W
	9	0		17·65	539·9	65·2	705·6	66·9	W
	10	0		17·13	536·9	65·4	700·7	66·4	W
	11	0		17·06	534·4	65·2	695·3	65·8	H
	12	0		16·60	534·5	64·9	692·3	65·3	H
	13	0	25	16·18	532·1	64·5	689·5	64·8	H
	14	0		15·49	531·6	64·2	688·7	64·2	H
	15	0		15·58	532·8	63·8	689·1	63·7	H
	16	0		15·38	533·5	63·4	689·1	63·2	H
	17	0		13·74	532·6	63·1	691·1	62·6	H
	18	0		12·78	533·5	62·8	695·5	62·2	H
	19	0		12·04	530·8	62·5	700·3	61·8	W
	20	0		11·21	526·0	62·2	707·4	61·5	W
	21	0		11·66	521·6	62·0	702·3	61·8	B
	22	0		12·98	519·9	62·0	691·9	61·8	W
	23	0		15·52	518·4	61·9	680·6	61·9	W
7	0	0		20·79	519·1	61·9	681·8	62·2	W
	1	0		24·01	522·5	62·0	688·6	62·5	W
	2	0		24·20	528·3	62·3	687·8	62·9	W
	3	0		23·11	534·5	62·7	692·7	63·3	W
	4	0		20·38	534·7	62·8	703·3	63·5	W
	5	0		18·81	540·3	62·9	718·1	63·4	W
	6	0		18·74	539·2	62·8	716·9	63·2	H
	7	0		18·70	538·3	62·8	714·0	62·9	W
	8	0		18·38	538·6	62·6	710·8	62·6	W
	9	0		18·14	538·4	62·4	709·5	62·3	H
	10	0		16·90	533·8	62·2	711·9	62·0	H
	11	0		16·90	532·8	62·0	702·8	61·6	B
	12	0		16·53	530·1	61·8	703·1	61·2	B
	13	0	25	16·48	529·6	61·5	703·6	61·0	B
	14	15		16·12	529·8	61·2	699·8	60·7	B
	15	0		14·78	527·9	61·0	700·0	60·5	B
	16	0		14·77	529·2	60·9	703·0	60·2	B
	17	0		13·41	527·6	60·7	702·8	59·9	B
	18	0		11·44	526·4	60·4	702·8	59·6	B
	19	0		10·28	523·2	60·1	705·0	59·6	H
	20	0		11·12	520·3	60·0	706·9	59·6	H
	21	0		12·92	517·4	59·9	703·0	59·5	W
	22	0		12·67	516·1	59·9	689·0	59·8	H
	23	0		15·24	512·8	59·9	686·1	60·2	H
8	0	0		17·61	514·2	60·1	680·2	60·9	H
	1	0		19·81	520·1	60·5	678·9	62·0	H
	2	0		21·43	522·2	61·2	677·7	63·0	H
	3	0		21·93	532·0	62·0	677·1	64·2	H
	4	0		21·24	537·1	62·9	681·1	65·0	H
8	5	0	25	19·51	537·2	63·6	685·7	65·6	H
	6	0		16·89	538·0	64·3	680·5	66·0	B
	7	0		16·80	541·1	64·7	681·4	66·1	B
	8	0		17·36	540·8	64·9	689·3	65·6	B
	9	0		17·39	540·9	64·8	691·1	65·0	B
	10	0		16·95	535·5	64·4	692·5	64·4	B
	11	0		13·46	535·7	64·0	691·0	64·0	W
	12	0		15·15	533·7	63·7	689·4	63·5	W
9	13	0	25	14·68	530·6	63·3	675·9	62·7	H
	14	0		15·71	533·1	63·0	675·0	62·2	H
	15	0		16·19	528·3	62·7	678·5	61·6	H
	16	0		15·25	528·1	62·3	679·2	61·0	H
	17	0		12·15	528·5	61·8	687·1	60·4	H
	18	0		10·95	529·8	61·3	699·3	59·9	H
	19	0		10·30	527·8	61·0	706·9	59·7	W
	20	0		13·93	526·4	60·7	698·0	59·5	W
	21	5		13·09	522·7	60·4	694·9	59·7	B
	22	0		14·87	518·5	60·2	699·8	59·9	W
	23	0		17·26	518·0	60·2	681·3	60·1	W
10	0	0		21·63	515·8	60·4	678·6	60·7	W
	1	0		21·34	526·0	60·7	668·0	61·2	W
	2	0		20·74	531·9	60·9	670·7	61·6	W
	3	0		21·09	535·5	61·1	672·0	62·0	W
	4	0		20·90	536·2	61·4	686·9	62·4	W
	5	0		19·55	544·3	61·7	694·4	62·8	W
	6	0		17·53	546·4	62·0	696·8	63·2	H
	7	0		16·19	543·5	62·3	698·9	63·4	H
	8	0		17·27	544·1	62·4	692·7	63·2	H
	9	0		16·89	538·7	62·4	698·9	63·2	H
	10	0		17·36	540·5	62·4	691·8	62·5	H
	11	6		14·41	534·7	62·0	669·4	61·3	B
	12	0		15·05	533·2	61·5	672·9	60·5	B
	13	0	25	16·21	532·3	60·9	676·0	59·5	B
	14	0†		16·10	529·1	60·3	662·4	58·5	B
	15	0		17·10	526·6	59·7	628·4	58·0	B
	16	0		12·15	526·8	59·1	656·0	57·0	B
	17	0		12·02	526·7	58·5	680·8	56·5	B
	18	0		11·55	524·7	58·0	691·1	56·2	B
	19	0		12·43	527·3	57·8	697·4	56·3	H
	20	0		11·03	521·8	57·5	702·8	56·4	H
	21	0		13·64	513·7	57·4	707·0	56·5	W
	22	0		17·81	513·5	57·3	709·8	57·0	H
	23	0		17·74	519·3	57·3	703·7	57·5	H
11	0	0		21·51	523·9	57·6	698·7	58·5	H
	1	0		21·79	527·4	58·1	693·0	59·6	H
	2	0		21·81	530·4	58·9	686·1	61·0	H
	3	0		21·23	534·0	59·8	681·3	62·0	B
	4	0		20·33	537·2	60·7	683·3	62·7	B
	5	0		18·16	542·2	61·3	696·1	63·5	H
	6	0		16·65	533·0	61·9	701·8	63·5	B
	7	0		16·70	539·7	62·1	706·3	63·5	B
	8	0		16·82	541·8	62·2	700·1	63·1	B
	9	0		16·95	536·9	62·1	699·9	62·7	B
	10	0		16·60	533·7	61·9	698·1	62·2	B
	11	0		16·15	534·8	61·6	694·2	61·8	W
	12	0		13·99	532·8	61·3	688·9	61·3	W

DECLINATION. Magnet untouched, May 29ᵈ—Aug. 4ᵈ.

BIFILAR. Observed 2^m after the Declination $k = 0·000140$. BALANCE. Observed 3^m after the Declination, $k = 0·0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
11	13	0	25	15·94	531·3	61·0	698·2	60·8	W
	14	0		16·72	532·9	60·7	691·0	60·4	W
	15	0		15·44	529·3	60·4	691·1	60·0	W
	16	0		17·37	531·2	60·0	687·8	59·5	W
	17	0		16·25	531·7	59·9	684·4	59·4	W
	18	0		13·90	533·5	59·7	684·4	59·5	W
	19	0		12·08	528·6	59·7	695·2	59·5	B
	20	0		11·34	524·8	59·6	690·6	59·5	B
	21	0		12·87	521·0	59·5	699·9	59·5	H
	22	0		13·90	522·3	59·4	690·0	59·7	H
	23	0		16·77	524·9	59·5	681·5	60·2	H
12	0	0		20·85	525·2	59·8	672·0	61·2	H
	1	0		22·72	529·9	60·2	676·4	62·5	H
	2	0		22·87	532·0	61·2	684·9	63·9	H
	3	0		22·42	533·8	62·2	689·7	64·9	H
	4	0		21·56	536·8	63·0	684·9	65·3	H
	5	0		19·68	536·4	63·5	691·2	65·2	B
	6	0		17·53	541·4	63·7	693·1	65·0	W
	7	0		15·44	537·5	63·7	698·2	64·6	W
	8	0		16·62	541·8	63·6	698·7	64·2	W
	9	0		17·31	537·1	63·3	693·6	63·8	W
	10	0		17·17	538·7	63·0	690·9	63·4	W
	11	0		16·62	535·9	62·7	688·4	63·0	H
	12	0		16·30	535·4	62·4	687·6	62·6	H
	13	0	25	16·95	534·7	62·2	688·5	62·2	H
	14	0		16·73	531·7	62·0	690·4	61·8	H
	15	0		18·95	533·8	61·6	686·2	61·4	H
	16	0		16·32	532·2	61·3	682·9	61·0	H
	17	0		15·52	530·5	61·0	677·1	60·6	H
	18	0		12·78	535·1	60·8	661·2	60·3	H
	19	0		11·95	533·3	60·6	664·9	60·0	W
	20	0		13·32	530·9	60·4	671·1	60·2	W
	21	0		14·03	524·3	60·5	670·9	60·8	B
	22	0		16·80	522·4	60·7	672·7	61·4	W
	23	0		18·97	527·1	61·1	669·0	62·2	W
13	0	0		22·00	530·2	61·7	664·1	62·9	W
	1	0		23·22	540·3	62·2	668·7	63·5	B
	2	0		25·51	536·1	62·7	679·1	64·0	W
	3	0		22·30	541·8	63·1	670·7	64·7	W
	4	0		21·32	538·6	63·6	684·4	65·3	W
	5	0		18·72	543·0	64·0	689·1	65·5	W
	6	0		17·70	538·5	64·2	692·4	65·7	H
	7	0		16·36	541·1	64·4	687·1	65·9	H
	8	0		16·15	541·3	64·6	685·7	65·8	H
	9	0		16·86	539·6	64·8	693·0	65·7	H
	10	0		15·92	540·1	64·4	686·7	64·6	H
	11	0†		12·70	537·4	64·0	682·2	63·5	B
	12	0		14·94	534·3	63·5	681·7	62·8	B
	13	0	25	14·77	533·4	63·0	677·3	62·0	B
	14	0		14·77	533·3	62·5	672·2	61·2	B
	15	0		12·72	530·6	62·0	671·6	60·5	B
	16	0		13·63	528·8	61·5	693·6	60·0	B
	17	0		13·50	528·1	61·0	688·7	59·5	B
	18	0		11·51	524·8	60·6	693·5	59·1	B
	19	0		12·98	524·5	60·3	691·2	59·1	H
	20	0		12·80	523·6	60·0	692·2	59·1	H

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
13	21	0	25	13·99	523·5	59·9	701·4	59·0	W
	22	0		15·89	522·0	59·8	703·8	59·3	H
	23	0		18·35	522·5	59·8	690·2	59·6	H
14	0	5		23·48	534·0	59·8	685·4	60·0	H
	1	0		23·41	533·3	60·0	672·9	60·5	H
	2	0		23·99	534·4	60·2	676·9	61·2	H
	3	0		23·38	536·0	60·6	692·0	61·9	H
	4	0		20·29	534·3	61·0	698·9	62·4	H
	5	0		17·84	535·4	61·4	701·7	62·6	H
	6	0		17·15	538·2	61·8	702·4	62·6	W
	7	0		16·75	536·6	61·8	698·7	62·4	H
	8	0		16·57	539·5	61·6	692·9	62·0	H
	9	0		16·05	539·0	61·3	688·4	61·3	H
	10	0		16·15	536·3	61·0	687·7	60·6	H
	11	0		16·35	535·0	60·6	685·6	59·9	W
	12	0		16·30	532·3	60·1	687·1	59·2	W
	13	0	25	16·35	532·5	59·7	689·7	58·7	W
	14	0		16·21	530·1	59·2	694·9	58·2	W
	15	0		15·74	529·9	58·8	696·6	57·7	W
	16	0		......	......	......	......	......	W
	17	0		13·57	529·9	58·0	693·0	56·8	W
	18	0		13·36	532·1	57·8	706·0	56·9	W
	19	0		11·68	529·9	57·8	709·6	56·9	B
	20	0		12·33	528·5	57·7	719·4	57·0	B
	21	0		14·23	524·7	57·5	713·2	57·3	H
	22	0		15·83	521·0	57·5	695·1	57·6	H
	23	0		16·70	516·9	57·6	696·8	58·0	H
15	0	0		19·01	515·4	57·7	683·4	58·2	H
	1	0		20·94	520·2	57·8	691·9	58·3	H
	2	0		22·24	525·1	57·8	697·7	58·3	H
	3	0		21·68	532·0	57·9	700·8	58·4	H
	4	0		20·45	536·4	58·0	707·3	58·5	W
	5	0		18·43	536·9	58·1	711·6	58·8	B
	6	0		17·20	541·4	58·3	710·6	59·1	W
	7	0		16·60	544·0	58·6	710·4	59·5	W
	8	0		16·82	543·2	58·8	703·5	59·5	W
	9	0		17·00	541·8	58·9	709·1	59·5	W
	10	0		16·92	536·2	58·8	706·8	59·3	W
	11	0		16·82	536·6	58·5	696·8	58·6	H
	12	0		16·66	534·6	58·3	695·2	58·0	B
16	13	0†	25	24·30	540·9	60·6	639·1	60·0	B
	14	0†		06·34	523·9	59·9	588·7	59·2	B
	15	0†		09·56	536·3	59·3	637·8	58·5	B
	16	0		10·09	532·3	58·8	674·3	57·5	B
	17	0†		09·89	521·6	58·2	677·1	56·6	B
	18	0†		17·27	527·4	57·7	678·3	56·0	B
	19	0†		12·60	521·8	57·2	674·4	55·7	H
	20	0†		13·17	528·5	56·8	675·7	55·6	H
	21	0		15·54	519·4	56·6	682·4	55·8	W
	22	0		11·82	522·4	56·3	677·8	56·5	H
	23	0		17·44	522·7	56·6	674·2	57·3	H
17	0	0		21·46	526·1	57·0	669·1	57·9	H
	1	0		21·86	521·8	57·4	673·8	58·5	H
	2	0		22·25	532·6	57·8	671·2	59·0	H
	3	0		21·66	530·3	58·1	680·2	59·3	H
	4	0		21·86	540·1	58·5	692·4	59·6	H

DECLINATION. Magnet untouched, May 29d—Aug. 4d.

BIFILAR. Observed 2m after the Declination, $k=0{\cdot}000140$. BALANCE. Observed 3m after the Declination, $k=0{\cdot}0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
17	5	0	25	19·73	530·2	58·8	706·8	59·9	H
	6	0		18·54	544·4	58·9	702·6	59·8	B
	7	0		17·36	550·4	59·0	700·8	59·7	B
	8	0		12·35	545·6	59·0	697·9	59·3	B
	9	0		15·17	537·8	58·9	702·1	59·0	B
	10	0		16·53	535·1	58·7	696·2	58·6	B
	11	0		17·49	536·3	58·4	686·9	58·2	W
	12	0		14·91	534·3	58·1	683·7	58·0	W
	13	0†	25	13·05	532·7	57·9	683·2	57·6	W
	14	0†		24·94	531·7	57·7	661·5	57·3	W
	15	0		15·59	535·7	57·4	653·6	57·1	W
	16	0		12·60	536·3	57·2	656·8	56·7	W
	17	15		17·76	522·7	56·9	664·2	56·1	W
	18	0		14·91	527·4	56·7	655·6	55·9	W
	19	0		11·98	523·0	56·4	672·5	55·8	B
	20	0		10·78	519·8	56·2	679·3	55·7	B
	21	0		12·56	519·4	56·0	688·2	55·7	H
	22	0		15·91	514·2	56·0	680·7	56·1	H
	23	0		18·27	513·1	56·1	676·0	56·5	B
18	0	0		21·01	519·3	56·2	673·4	57·0	H
	1	0		21·53	534·1	56·5	673·2	57·2	H
	2	0		22·82	534·5	56·8	682·7	57·4	B
	3	0		21·53	538·4	57·0	690·7	57·4	B
	4	0		20·94	542·3	57·0	703·7	57·5	W
	5	0		20·85	545·9	57·0	706·9	57·6	W
	6	0		18·95	543·7	57·1	710·9	57·5	W
	7	0		14·92	541·1	57·1	721·6	57·4	W
	8	0		18·16	543·1	57·1	713·7	57·2	W
	9	0		17·49	539·9	57·0	710·4	57·0	W
	10	0		16·70	535·7	56·8	703·6	56·7	W
	11	0†		19·01	552·7	56·6	666·5	56·5	H
	12	0†		12·06	530·4	56·5	664·4	56·5	H
	13	0	25	14·20	531·0	56·3	680·1	56·4	H
	14	0		14·70	533·4	56·2	690·1	56·4	H
	15	0		13·86	530·4	56·1	691·8	56·0	H
	16	0		17·53	525·5	56·0	688·6	55·7	H
	17	0		15·34	524·6	55·7	689·4	55·3	H
	18	0		13·49	524·0	55·4	694·5	54·9	H
	19	0		11·61	523·2	55·0	692·4	54·5	W
	20	0		12·01	520·2	54·9	690·4	54·3	W
	21	0		13·52	520·1	54·7	690·8	54·2	B
	22	0		16·05	517·2	54·6	697·5	54·3	W
	23	0		19·37	518·1	54·7	690·5	54·7	W
19	0	0		22·69	524·8	54·7	682·4	55·0	W
	1	0		23·78	528·2	54·8	680·8	55·2	W
	2	0		24·23	531·2	54·9	684·3	55·6	W
	3	0		23·09	537·1	55·1	686·8	56·0	W
	4	0		21·14	538·5	55·5	690·7	56·3	W
	5	0		18·81	539·5	55·9	703·9	56·5	W
	6	0		17·49	540·7	55·9	705·8	56·6	H
	7	0		17·76	540·2	56·1	705·1	56·7	H
	8	0		17·56	541·6	56·1	703·4	56·8	H
	9	0		14·51	538·2	56·1	705·7	56·7	H
	10	0		17·49	535·6	56·0	702·1	56·4	H
	11	0		16·82	533·2	56·0	699·9	56·4	W
	12	0		16·57	533·9	55·9	695·9	56·4	W

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
19	13	0	25	15·44	530·2	55·9	696·2	56·4	D
	14	0		14·80	529·5	55·9	696·7	56·0	D
	15	0		14·24	530·0	55·6	694·1	55·6	D
	16	0		14·94	528·0	55·3	701·5	55·3	D
	17	0		14·37	529·8	55·1	688·9	54·9	B
	18	0		12·01	527·2	54·8	716·9	54·5	B
	19	0		12·01	524·1	54·6	705·4	54·2	B
	20	0		13·29	522·6	54·4	704·8	54·0	B
	21	0		13·47	520·4	54·2	698·1	54·0	H
	22	0		13·81	516·3	54·0	694·0	54·2	H
	23	0		16·30	515·3	54·0	687·9	54·9	H
20	0	0		19·51	519·4	54·3	691·5	55·7	W
	1	0		21·53	527·8	55·0	689·3	57·1	W
	2	0		22·47	531·7	55·9	691·5	58·3	W
	3	0		22·27	536·3	56·7	693·1	58·9	W
	4	0		22·37	538·3	57·3	695·8	59·4	H
	5	0		19·14	542·6	57·8	699·5	59·8	H
	6	0		16·95	541·8	58·0	698·4	59·8	D
	7	0		16·63	545·2	58·2	697·8	59·8	D
	8	0		18·16	544·5	58·4	697·2	59·8	B
	9	0		16·73	543·4	58·5	693·4	59·7	B
	10	0		13·64	548·8	58·5	679·3	59·7	B
	11	0		14·73	540·7	58·6	664·9	59·5	W
	12	0		14·26	537·9	58·5	671·4	59·3	W
	13	0	25	13·37	539·8	58·3	671·5	59·0	W
	14	0		10·92	531·2	58·2	669·5	58·9	W
	15	0†		16·28	529·1	58·1	667·4	58·8	W
	16	0†		10·92	533·4	58·1	659·9	58·9	W
	17	0†		07·98	530·9	58·1	659·3	58·7	W
	18	0		08·26	529·9	58·0	670·0	58·7	W
	19	0		09·37	526·3	58·3	678·3	59·0	B
	20	0		10·01	525·0	58·6	687·1	59·3	B
	21	0		14·17	519·1	58·7	689·3	59·6	H
	22	0		17·89	516·9	58·9	668·8	59·9	H
	23	0		19·62	515·1	59·0	663·7	60·2	H
21	0	0		24·59	517·0	59·4	661·3	60·8	B
	1	0		27·31	531·8	59·9	663·8	61·5	H
	2	0		27·75	538·4	60·4	662·5	62·2	B
	3	0		27·61	535·6	61·0	677·2	63·0	H
	4	0		25·58	541·8	61·7	705·2	63·6	B
	5	0		22·87	540·2	62·2	728·0	64·2	B
	6	0		19·53	541·6	62·7	746·0	64·5	W
	7	0		18·57	543·2	63·0	746·3	64·5	W
	8	0		18·34	547·1	63·0	734·4	64·1	W
	9	0		14·73	543·1	63·0	731·6	63·6	W
	10	0		15·78	540·0	62·8	716·5	63·2	W
	11	0		14·11	538·0	62·4	697·5	62·6	H
	12	0		12·75	523·7	62·1	688·6	62·1	H
	13	0	25	13·17	527·5	61·8	687·4	61·6	H
	14	0		14·51	535·8	61·4	660·9	61·1	H
	15	0		11·96	529·1	61·0	669·7	60·6	H
	16	0		12·73	529·1	60·7	686·7	60·2	H
	17	0		11·19	526·6	60·3	697·9	59·8	H
	18	0		12·55	525·2	60·0	698·6	59·5	H
	19	4		12·43	524·9	60·0	704·9	59·6	W
	20	0		13·23	525·2	59·9	699·6	59·8	W

DECLINATION. Magnet untouched, May 29ᵈ—Aug. 4ᵈ.

BIFILAR. Observed 2^m after the Declination, $k = 0·000140$. BALANCE. Observed 3^m after the Declination, $k = 0·0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs. d.	h.	m.	DECLINATION. °	′	BIFILAR. Corrected. Sc. Div.	BIFILAR. Thermometer. °	BALANCE. Corrected. Mic. Div.	BALANCE. Thermometer. °	Observer's Initial.
21	21	5	25	14·20	521·7	59·9	691·9	60·1	B
	22	0		15·29	521·5	60·0	690·8	60·5	W
	23	0		16·84	521·1	60·3	685·4	61·3	W
22	0	0		19·12	523·5	60·8	681·6	62·1	W
	1	0		20·18	526·3	61·3	682·0	62·9	W
	2	0		20·65	528·6	61·9	686·9	63·7	W
	3	0		20·38	531·6	62·6	688·3	64·5	W
	4	0		19·37	532·0	63·2	683·0	65·3	W
	5	0		18·57	534·7	63·9	688·2	66·0	W
	6	0		18·72	534·8	64·4	683·9	66·5	H
	7	0		18·81	540·4	64·9	684·2	66·8	H
	8	0		18·16	536·7	65·2	690·6	66·9	H
	9	0		17·26	539·3	65·5	683·5	66·6	H
	10	0		16·52	536·6	65·5	686·0	66·0	H
	11	0		16·63	535·8	65·2	680·7	65·2	B
	12	0		16·21	535·8	64·9	676·1	64·5	B
23	13	0	25	15·69	532·3	71·0	666·7	71·0	W
	14	0		15·41	531·3	70·5	667·0	70·3	W
	15	0		15·36	531·2	70·0	667·3	69·5	W
	16	0		14·10	529·9	69·5	672·0	68·6	W
	17	0		13·00	529·8	68·9	680·5	68·0	W
	18	0		11·37	528·6	68·5	687·1	67·4	W
	19	0		10·85	525·3	68·0	688·0	67·0	B
	20	0		11·25	524·1	67·6	686·0	66·5	B
	21	0		12·02	520·9	67·2	683·0	66·6	H
	22	0		13·44	519·1	67·1	683·5	66·8	H
	23	0		15·47	521·2	67·0	678·8	67·0	H
24	0	0		18·92	522·7	67·0	657·7	67·3	H
	1	0		19·69	519·7	67·1	666·5	67·6	H
	2	0		19·68	525·4	67·3	665·2	67·9	H
	3	0		20·11	531·9	67·6	662·6	67·8	W
	4	0		18·57	529·6	67·5	665·6	67·6	H
	5	0		16·82	533·6	67·4	675·3	67·3	B
	6	0		16·62	538·3	67·2	677·3	67·0	W
	7	0		16·86	538·1	67·0	682·0	66·7	W
	8	0		17·40	539·4	66·8	685·7	66·3	W
	9	0		17·20	538·0	66·5	675·9	65·8	W
	10	0		16·92	536·8	66·2	674·4	65·4	W
	11	0		16·52	533·9	65·9	670·7	65·0	H
	12	0		15·99	534·8	65·5	667·8	64·6	H
	13	0	25	14·84	531·6	65·1	669·0	64·3	H
	14	0		14·67	531·8	64·8	670·5	64·0	H
	15	0		14·44	531·9	64·4	669·5	63·5	H
	16	0		14·20	531·0	64·1	669·7	63·0	H
	17	0		12·78	533·5	63·8	670·1	62·5	H
	18	0		11·77	529·1	63·4	674·5	62·0	H
	19	0		10·81	523·6	63·0	674·1	61·3	W
	20	0		12·85	521·3	62·6	667·9	60·7	W
	21	0		12·78	519·0	62·1	657·2	60·0	B
	22	0		14·78	518·2	61·6	659·3	59·5	W
	23	3		16·80	516·9	61·1	650·6	59·1	W
25	0	4		20·38	519·9	60·7	636·1	58·7	W
	1	0		22·30	527·4	60·2	644·0	58·3	W
	2	0		22·33	527·2	59·8	642·5	58·0	W
	3	0		23·34	529·5	59·5	644·0	57·9	W
	4	0		21·34	531·1	59·2	645·7	57·7	H

Göttingen Mean Time of Declination Obs. d.	h.	m.	DECLINATION. °	′	BIFILAR. Corrected. Sc. Div.	BIFILAR. Thermometer. °	BALANCE. Corrected. Mic. Div.	BALANCE. Thermometer. °	Observer's Initial.
25	5	0	25	20·06	535·3	59·0	661·1	57·5	W
	6	0		17·34	536·3	58·8	672·2	57·5	H
	7	0		16·89	536·5	58·5	678·4	57·2	H
	8	0		15·58	539·3	58·2	676·2	56·7	H
	9	0		15·99	538·5	57·9	672·3	56·2	H
	10	0		16·82	534·9	57·4	669·8	55·6	H
	11	0		16·63	532·1	57·0	667·7	55·2	B
	12	0		15·85	530·1	56·6	665·7	54·8	B
	13	0	25	16·10	530·5	56·2	662·9	54·4	B
	14	0		14·85	529·0	55·8	659·6	54·0	B
	15	0		12·76	529·9	55·4	656·5	53·5	B
	16	0		12·04	532·9	55·0	656·7	53·0	B
	17	0		09·79	532·3	54·6	662·2	52·8	B
	18	0		10·74	537·8	54·3	652·3	52·5	B
	19	0		10·95	520·0	53·9	647·3	52·5	H
	20	7		11·95	530·5	53·7	647·0	52·6	H
	21	0		12·65	523·4	53·6	651·4	52·7	W
	22	0		17·02	520·1	53·4	643·2	53·0	H
	23	0		18·00	522·9	53·5	642·1	53·5	H
26	0	0		15·88	524·1	53·7	635·0	54·0	H
	1	0		22·00	526·2	53·9	642·4	54·4	H
	2	0		22·24	523·4	54·0	661·4	54·8	H
	3	0		23·16	532·8	54·2	658·1	55·0	H
	4	0		20·70	535·2	54·4	661·4	55·2	H
	5	0		17·56	538·2	54·7	668·6	55·4	H
	6	0		16·38	537·6	54·9	661·2	55·5	B
	7	0		16·75	544·1	55·0	661·2	55·4	B
	8	0		16·55	544·7	55·0	667·3	55·1	B
	9	0		13·43	547·8	54·9	669·5	54·8	B
	10	0		13·50	535·0	54·7	667·3	54·5	B
	11	0		14·94	531·4	54·5	662·5	54·3	W
	12	0		15·54	531·6	54·2	656·0	54·1	W
	13	0	25	15·52	530·3	54·0	657·2	53·9	W
	14	0		14·87	530·3	53·8	655·7	53·5	W
	15	0		13·90	529·6	53·6	657·9	53·0	W
	16	0		13·56	530·2	53·4	663·1	52·8	W
	17	0		12·89	528·4	53·1	666·3	52·5	W
	18	0		12·58	525·0	52·9	669·3	52·2	W
	19	0		11·75	522·8	52·7	668·1	52·0	B
	20	0		12·26	523·5	52·6	668·2	52·1	B
	21	0		12·85	523·2	52·5	671·8	52·4	H
	22	0		15·47	521·9	52·5	671·9	52·9	H
	23	0		16·48	521·3	52·8	663·7	53·5	B
27	0	0		20·16	526·6	53·1	645·4	54·5	H
	1	0		21·37	531·4	53·7	636·8	55·3	H
	2	0		21·36	533·8	54·4	640·6	56·0	B
	3	0		21·53	532·3	55·0	645·2	56·8	B
	4	0		20·42	533·8	55·7	646·7	57·6	B
	5	0		19·71	535·6	56·3	649·4	58·1	B
	6	0		18·16	537·5	56·8	654·5	58·4	W
	7	0		17·71	543·2	57·2	658·7	58·7	W
	8	0		14·70	542·2	57·6	673·4	58·9	W
	9	0		16·65	542·1	57·7	674·9	59·0	W
	10	0		16·48	539·3	57·8	672·0	58·6	W
	11	0		16·50	535·8	57·8	666·6	58·2	H
	12	0		16·25	534·8	57·5	665·4	57·8	H

DECLINATION. Magnet untouched, May 29^d—Aug. 4^d.

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0·0000085$.

June 25^d—20^h. Small insect seen on the balance cross plate.

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
27 13 0	25 15·42	533·4	57·2	672·6	57·4	H
14 0	14·99	533·3	57·0	668·9	57·0	H
15 0	15·44	533·3	56·7	662·3	56·6	H
16 0	13·69	532·5	56·4	661·6	56·3	H
17 0	13·27	533·1	56·1	662·7	55·9	H
18 0	11·62	533·6	55·9	659·6	55·5	H
19 0	12·01	531·3	55·7	668·2	55·3	W
20 0	12·25	528·1	55·5	678·7	55·4	W
21 0	13·39	523·9	55·4	676·2	55·5	B
22 0	15·04	522·4	55·4	669·3	55·8	W
23 0	17·19	522·5	55·7	673·4	56·4	W
28 0 0	20·11	527·0	56·0	665·2	57·1	W
1 0	21·50	531·0	56·6	661·0	58·2	W
2 0	22·17	538·3	57·2	647·5	59·2	W
3 0	21·36	543·1	58·0	655·5	60·3	W
4 2	20·05	543·2	59·0	648·0	61·7	W
5 0	18·84	548·6	60·0	650·7	62·8	W
6 0	18·07	547·0	61·1	660·4	64·0	H
7 0	17·36	547·2	62·0	663·7	64·6	H
8 0	16·86	546·5	62·7	659·4	64·2	H
9 0	17·51	540·9	62·9	658·2	64·2	H
10 0	16·72	545·4	62·8	661·8	63·6	H
11 0	15·96	545·8	62·6	659·7	63·0	B
12 0	14·50	542·4	62·2	659·5	62·4	B
13 0	25 15·29	541·8	61·8	658·9	61·8	B
14 0	16·50	546·1	61·4	651·2	61·1	B
15 0†	14·77	536·7	61·0	649·7	60·5	B
16 0	14·20	537·3	60·6	655·5	60·0	B
17 0	11·71	534·4	60·2	662·2	59·3	B
18 0†	06·06	530·8	59·8	656·5	58·7	B
19 0†	08·82	532·0	59·3	655·9	58·2	H
20 0†	11·35	528·6	58·9	661·4	58·0	H
21 0†	08·95	525·5	58·7	658·1	57·8	W
22 0†	17·40	512·6	58·4	662·0	57·9	H
23 0	18·60	515·4	58·2	650·3	58·2	H
29 0 3	24·59	519·2	58·2	640·1	58·8	H
1 0	22·17	534·0	58·5	641·4	59·5	H
2 0	22·91	535·4	59·1	661·9	60·5	H
3 0	20·20	554·0	59·9	670·9	61·5	H
4 0	22·01	540·1	60·7	679·6	62·5	H
5 0	20·27	545·7	61·4	681·7	63·4	H
6 0	18·37	554·6	62·1	679·5	63·4	B
7 0	15·65	545·6	62·3	686·1	63·3	B
8 0	13·64	543·5	62·4	682·7	63·0	B
9 0	14·48	542·2	62·3	676·0	62·6	B
10 0	13·05	540·6	62·0	652·6	62·2	B
11 0	14·98	533·6	61·8	656·7	61·7	W
12 0	16·65	531·6	61·6	644·5	61·0	W
30 13 0	25 16·10	531·1	61·2	657·6	60·5	H
14 0	16·85	532·6	60·7	665·1	59·9	H
15 0	17·24	532·2	60·2	657·6	59·2	H
16 0†	20·18	527·8	59·7	648·3	58·4	H
17 0†	13·30	529·0	59·0	658·4	57·8	H
18 0†	10·03	525·2	58·6	667·4	57·2	H
19 0	09·42	524·1	58·2	672·2	56·8	W
20 0	08·48	521·9	57·9	658·9	56·5	W

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
30 21 0	25 11·44	515·9	57·6	647·1	56·5	B
22 0	15·41	515·1	57·4	655·0	56·7	W
23 0	17·39	523·3	57·3	650·1	57·1	W
1 0 0	18·67	524·7	57·4	637·3	57·5	W
1 0	19·62	524·8	57·7	645·8	58·3	W
2 0	21·26	529·8	58·1	640·6	59·3	W
3 0	20·32	531·9	58·8	642·4	60·3	W
4 0	18·68	534·1	59·5	659·3	61·1	W
5 0	17·27	533·7	60·2	671·4	61·8	W
6 0	16·75	539·9	60·8	667·6	62·4	H
7 0	15·76	537·3	61·2	665·2	62·8	H
8 0	16·10	544·0	61·5	660·8	62·5	H
9 0	16·18	540·4	61·6	661·3	62·1	H
10 0	15·11	537·1	61·4	664·6	61·4	H
11 0	14·91	534·1	61·2	661·0	60·8	B
12 0	15·51	534·1	60·8	658·0	60·3	B
13 0	25 16·18	532·9	60·4	654·3	59·7	B
14 0†	16·39	536·3	60·0	649·0	59·2	B
15 0	16·15	533·0	59·7	646·2	58·8	B
16 0	15·67	532·6	59·3	656·2	58·3	B
17 0	16·21	532·3	59·0	661·0	58·0	B
18 0	12·98	532·7	58·7	660·4	57·7	B
19 0	11·12	530·9	58·5	670·6	57·9	H
20 0	10·25	529·2	58·5	673·8	58·1	H
21 0	11·61	526·5	58·5	669·8	58·3	W
22 0	14·11	522·3	58·4	673·4	58·6	H
23 0	17·00	519·0	58·6	672·3	59·1	H
2 0 0	20·77	520·9	58·8	661·2	59·5	H
1 0	20·96	523·6	59·0	660·1	60·0	H
2 0	22·71	533·3	59·4	660·1	60·5	H
3 0	23·76	535·7	60·0	666·4	61·5	H
4 0	22·42	542·9	60·5	671·3	62·3	H
5 0	20·82	540·3	61·0	678·6	62·9	H
6 0	18·97	542·5	61·7	676·8	63·3	B
7 0	17·98	540·5	62·2	676·4	63·5	B
8 0	17·36	539·7	62·6	680·2	63·5	B
9 0	16·68	536·6	62·7	674·4	63·2	B
10 0	16·01	537·8	62·4	672·4	62·6	B
11 0	16·12	537·2	62·0	665·4	62·0	W
12 0	15·91	536·0	61·7	663·6	61·5	W
13 0	25 14·78	536·1	61·4	660·8	61·0	W
14 0	14·64	534·2	61·0	660·3	60·5	W
15 0	14·75	532·6	60·7	664·5	60·0	W
16 0	14·08	532·6	60·3	669·7	59·5	W
17 0	12·04	529·4	60·0	674·3	58·9	W
18 0	10·77	530·5	59·6	675·4	58·3	W
19 0	10·70	528·2	59·2	676·7	58·0	B
20 0	11·07	526·6	58·9	665·7	58·0	B
21 0	11·66	524·3	58·7	666·6	58·1	H
22 0	14·03	523·4	58·7	661·5	58·5	H
23 0	17·17	520·9	58·7	666·9	58·9	B
3 0 0	20·38	520·5	58·9	643·7	59·6	B
1 0	20·97	529·3	59·3	641·5	60·5	H
2 0	21·53	537·5	60·0	641·9	61·5	B
3 0	20·85	536·3	60·8	648·6	62·6	H
4 3	19·98	543·2	61·6	657·2	63·3	H

DECLINATION. Magnet untouched, May 29d—Aug. 4d.
BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
3	5	0	25	20·18	537·7	62·0	662·0	63·4	B
	6	0		19·66	546·3	62·3	662·7	63·3	W
	7	0		18·88	542·0	62·5	672·4	63·3	W
	8	2		16·75	544·3	62·5	672·6	63·0	W
	9	0		17·09	541·4	62·3	670·0	62·9	W
	10	0		16·36	541·7	62·1	654·7	62·4	W
	11	0		16·21	537·8	61·8	658·4	61·7	H
	12	0		16·19	534·3	61·4	652·2	61·0	H
	13	0	25	15·92	535·5	61·0	653·0	60·3	H
	14	0		15·27	535·4	60·5	662·0	59·5	H
	15	0		15·62	534·4	60·0	658·8	58·8	H
	16	0		13·14	535·4	59·5	663·0	58·2	H
	17	0		12·51	527·7	59·0	670·4	57·7	H
	18	0		09·82	524·6	58·6	677·7	57·2	H
	19	0		11·34	526·6	58·2	675·0	56·7	W
	20	0†		14·48	527·9	57·8	663·4	56·5	W
	21	0		12·40	524·9	57·5	660·0	56·3	B
	22	0		13·36	524·4	57·2	663·2	56·3	W
	23	0		15·18	525·5	57·1	654·3	56·3	W
4	0	0		18·16	523·2	56·9	649·9	56·4	W
	1	0		20·85	528·4	56·9	646·3	56·5	W
	2	0		23·07	532·2	56·9	656·2	56·7	W
	3	0		23·63	534·3	56·9	658·6	56·9	B
	4	0		21·64	535·1	57·0	662·5	57·2	W
	5	0		19·64	548·0	57·1	671·9	57·6	W
	6	0		18·80	542·9	57·3	687·3	58·2	H
	7	0		19·51	545·0	57·7	686·8	58·5	H
	8	0		17·51	544·9	58·1	686·7	58·9	H
	9	0		16·13	539·1	58·5	690·5	59·4	H
	10	0		15·15	535·5	58·8	675·7	58·8	H
	11	0		15·51	534·6	58·7	667·5	58·3	B
	12	0		15·47	534·6	58·3	661·7	57·7	B
	13	0	25	15·02	533·3	57·9	662·2	57·1	B
	14	0		15·32	534·3	57·6	660·8	56·6	B
	15	0		15·74	531·9	57·2	662·3	56·2	B
	16	0		14·20	531·3	56·9	663·1	55·8	B
	17	0		13·54	531·4	56·6	671·5	55·5	B
	18	0		12·01	528·4	56·2	676·4	55·2	B
	19	0		12·18	526·5	55·9	672·3	54·9	H
	20	0		11·34	524·5	55·7	673·4	55·0	H
	21	0		14·31	522·9	55·6	668·2	55·0	W
	22	0		15·36	522·8	55·4	664·5	55·2	H
	23	0		18·20	521·3	55·3	665·3	55·9	H
5	0	0		21·03	523·2	55·6	659·9	56·2	H
	1	0		22·28	522·8	55·9	654·5	56·8	H
	2	0		21·17	523·7	56·3	651·5	57·5	H
	3	0		22·06	531·1	56·7	649·0	57·9	H
	4	0		21·53	533·3	57·0	666·6	58·3	H
	5	0		20·40	535·5	57·4	678·8	58·7	H
	6	0		19·51	542·4	57·9	676·6	59·0	B
	7	0		18·32	546·3	58·3	672·2	59·3	B
	8	0		17·20	542·5	58·5	670·6	59·5	B
	9	0		16·08	540·4	58·7	669·6	59·3	B
	10	0		16·30	538·1	58·6	664·4	59·0	B
	11	0		15·64	535·3	58·4	665·3	58·7	W
	12	0†		17·13	536·1	58·2	658·6	58·4	W
5	13	0†	25	13·69	531·7	58·0	658·7	58·2	W
	14	0		13·86	530·5	57·9	658·3	58·0	W
	15	0		13·72	531·7	57·7	660·7	57·5	W
	16	0		14·04	530·9	57·5	662·5	57·0	W
	17	0		13·12	532·2	57·2	668·0	56·7	W
	18	0		10·30	529·3	57·0	670·5	56·4	W
	19	0		11·57	527·7	56·8	665·4	56·1	B
	20	0		11·01	524·8	56·6	669·1	56·0	B
	21	0		12·62	520·1	56·3	661.9	55·9	H
	22	0		14·21	515·8	56·1	659·6	55·8	H
	23	0		16·65	513·3	56·0	656·7	55·8	B
6	0	0		18·84	515·4	56·0	653·2	56·0	B
	1	0		21·39	523·1	55·9	652·1	56·2	H
	2	0		22·69	527·4	56·0	654·1	56·4	B
	3	0		22·78	534·4	56·1	656·9	56·7	H
	4	0		19·08	534·8	56·4	668·6	57·3	H
	5	0		18·03	542·3	57·1	672·3	58·3	B
	6	0		17·39	543·5	57·7	673·6	59·0	W
	7	0		17·39	541·3	58·3	668·4	59·8	W
	8	0		17·39	543·6	58·9	667·8	60·2	W
	9	0		16·92	538·8	59·3	667·8	60·2	W
	10	0		17·39	536·2	59·4	667·7	59·9	W
	11	0		16·05	535·1	59·3	665·1	59·6	H
	12	0		15·47	535·6	59·0	663·8	59·2	H
7	13	0	25	14·43	540·9	61·8	661·4	60·8	B
	14	0		14·91	535·7	61·2	660·6	60·0	B
	15	0†		17·58	534·7	60·6	660·9	59·0	B
	16	0		15·51	534·5	60·0	654·4	58·3	B
	17	0		13·47	538·3	59·4	662·4	57·6	B
	18	0†		10·33	534·5	58·9	671·8	57·0	B
	19	0†		12·56	528·5	58·4	661·5	56·6	H
	20	0		14·23	533·1	58·0	647·6	56·6	H
	21	0		14·06	530·5	57·8	664·5	57·0	W
	22	0		16·35	521·1	57·7	654·6	57·5	H
	23	0		18·82	514·2	57·9	658·3	58·5	H
8	0	0		23·51	520·3	58·4	663·0	59·7	H
	1	0		25·09	528·8	59·0	667·8	60·5	H
	2	0		26·30	529·1	59·7	664·6	61·3	H
	3	0		23·27	538·7	60·2	665·8	62·0	H
	4	0†		22·13	544·0	60·8	711·4	63·0	H
	5	0†		21·91	562·7	61·6	761·1	64·0	H
	6	0†		21·36	551·9	62·6	764·6	64·7	B
	7	0		20·63	563·8	63·3	708·7	65·4	B
	8	0		17·44	552·9	64·0	700·9	66·0	B
	9	0		18·03	541·1	64·6	695·9	66·0	B
	10	0		17·47	538·7	64·8	682·1	65·5	B
	11	0		16·90	533·6	64·6	675·4	65·0	W
	12	0		16·53	541·7	64·2	657·4	64·2	W
	13	0†	25	13·20	538·1	63·8	658·6	63·5	W
	14	0†		15·24	536·0	63·3	661·0	63·0	W
	15	0†		14·51	535·2	62·9	653·8	62·4	W
	16	0†		15·64	528·7	62·5	661·5	61·9	W
	17	0†		16·05	525·9	62·1	645·2	61·2	W
	18	0†		17·12	522·2	61·7	640·4	60·5	W
	19	0†		19·59	523·0	61·3	635·5	60·0	B
	20	0		17·33	521·7	60·9	652·1	60·0	B

DECLINATION. Magnet untouched, May 29ᵈ—Aug. 4ᵈ.
BIFILAR. Observed 2ᵐ after the Declination, $k=0·000140$. BALANCE. Observed 3ᵐ after the Declination, $k=0·0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
8 21 0	25 16·32	512·4	60·7	651·2	60·1	H
22 0	15·74	512·6	60·6	657·1	60·2	H
23 0	16·95	511·7	60·6	651·8	60·3	B
9 0 3	17·19	517·1	60·6	675·8	60·7	B
1 0	17·81	525·6	60·7	676·0	61·0	H
2 0	19·58	527·7	60·8	672·6	61·5	H
3 0	20·09	530·3	61·0	675·8	61·8	B
4 0	18·84	529·2	61·2	681·1	62·1	H
5 0	18·16	528·6	61·5	689·7	62·3	H
6 0	18·28	533·2	61·8	690·4	62·5	W
7 0	16·93	541·5	62·0	687·2	62·8	W
8 0	16·89	547·0	62·1	687·0	63·0	W
9 0	16·82	539·1	62·3	688·8	62·8	W
10 0	16·75	536·9	62·3	674·8	62·5	W
11 0	16·21	533·8	62·2	676·9	62·2	H
12 0	16·92	537·6	62·0	669·3	61·8	H
13 0	25 15·88	534·4	61·7	660·8	61·5	H
14 0†	10·03	524·8	61·4	650·8	61·0	H
15 0†	12·11	524·9	61·1	647·6	60·6	H
16 0	18·14	525·9	60·8	647·7	60·2	H
17 0	15·38	527·8	60·5	646·4	59·6	H
18 0	13·00	529·6	60·1	656·6	59·0	H
19 0	14·23	530·1	59·7	661·4	58·5	W
20 0	11·91	524·9	59·3	671·5	58·5	W
21 2	14·51	518·1	59·1	673·0	58·5	B
22 0	15·47	518·7	59·0	673·6	58·8	W
23 0	17·24	523·8	59·0	669·0	59·4	W
10 0 0	17·80	531·4	59·4	668·2	60·2	W
1 0	17·60	529·7	59·9	663·3	61·4	W
2 0	17·53	528·1	60·6	676·7	62·3	W
3 0	18·18	530·6	61·2	671·5	62·5	W
4 0	18·81	533·7	61·6	677·0	62·6	W
5 0	18·13	537·8	61·7	690·5	62·5	W
6 0	17·68	542·6	61·7	687·2	62·5	H
7 0†	16·80	538·3	61·6	684·3	62·2	H
8 0	16·70	540·4	61·5	677·1	62·1	H
9 0	16·82	538·6	61·5	676·9	62·0	H
10 0	16·50	535·3	61·4	670·9	61·7	H
11 0	16·68	533·9	61·2	664·6	61·5	B
12 0	16·35	533·5	61·0	660·6	61·2	B
13 0	25 16·63	535·0	60·9	658·9	60·9	B
14 0	15·96	531·8	60·8	659·0	60·5	B
15 0	15·44	534·6	60·6	656·0	60·1	B
16 0	14·92	532·1	60·3	659·9	59·8	B
17 0	13·41	533·8	60·0	656·8	59·4	B
18 0	11·51	531·3	59·8	666·0	59·1	B
19 0	11·22	528·0	59·5	677·8	59·2	H
20 0	12·45	523·3	59·5	685·2	59·2	H
21 0	13·64	521·8	59·5	680·7	59·4	W
22 0	14·91	515·3	59·4	673·0	59·6	H
23 0	16·90	513·5	59·5	666·4	60·1	H
11 0 0	20·05	514·6	59·8	655·7	60·6	H
1 0	20·20	528·4	60·0	654·1	61·0	H
2 0	20·79	536·0	60·2	662·0	61·1	H
3 0	21·21	534·7	60·4	665·4	61·3	H
4 0	20·63	533·7	60·7	667·8	61·7	H

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
11 5 0	25 18·85	535·6	61·0	653·3	62·2	H
6 0	18·10	543·9	61·3	661·9	62·5	B
7 0	17·06	543·5	61·7	660·2	62·8	B
8 0	17·33	543·5	62·0	664·9	63·0	B
9 0	16·82	544·2	62·3	664·9	63·2	B
10 0	16·50	539·0	62·4	661·2	62·9	B
11 0	15·44	537·0	62·2	661·4	62·4	W
12 0	15·45	535·9	61·9	656·4	61·7	W
13 0	25 13·32	531·8	61·5	655·6	61·0	W
14 0	14·96	534·6	61·0	655·8	60·5	W
15 0†	16·21	531·0	60·7	654·2	60·0	W
16 0†	18·48	540·3	60·3	641·3	59·5	W
17 0	13·84	534·7	60·0	644·4	59·0	W
18 0	14·24	535·5	59·7	646·3	58·5	W
19 0	11·62	533·5	59·3	647·5	58·4	B
20 0	15·32	529·3	59·0	648·8	58·3	B
21 0	16·18	527·9	58·9	650·6	58·3	H
22 0	15·15	520·0	58·8	652·8	58·5	H
23 0	16·52	517·3	58·8	660·3	58·9	B
12 0 0	17·27	525·2	58·9	656·3	59·5	H
1 0	18·74	529·0	59·1	658·4	59·9	H
2 0	20·25	534·9	59·3	651·1	60·2	H
3 0	18·63	537·8	59·7	651·3	60·6	H
4 0	18·70	537·4	60·0	663·6	61·0	H
5 0	17·60	541·0	60·3	668·9	61·2	B
6 0	16·15	542·5	60·6	676·0	61·5	W
7 0	16·16	546·1	60·7	673·2	61·5	W
8 0	16·15	543·3	60·8	670·3	61·4	W
9 0	16·21	539·2	60·8	670·3	61·2	W
10 0	16·21	538·2	60·7	664·8	60·7	W
11 0	16·16	535·2	60·3	660·9	60·3	H
12 0	15·59	533·5	60·0	662·6	59·9	H
13 0	25 15·78	535·5	59·8	661·2	59·4	H
14 0	14·78	534·7	59·4	660·8	58·7	H
15 0	14·17	533·7	59·0	663·9	58·1	H
16 0	14·04	531·4	58·6	674·7	57·5	H
17 0	15·36	530·4	58·2	676·4	56·9	H
18 0	16·89	536·2	57·8	664·6	56·5	H
19 0	13·32	539·5	57·3	653·2	56·0	W
20 0†	10·16	536·7	56·9	644·6	55·7	W
21 0	13·46	528·1	56·7	660·1	55·8	B
22 0	15·79	520·2	56·7	654·5	56·0	W
23 0	19·53	519·3	56·6	655·7	56·2	W
13 0 0	21·29	525·1	56·6	640·5	56·4	W
1 0	21·48	543·4	56·6	632·5	56·5	W
2 0	21·86	537·1	56·7	640·4	57·0	W
3 0†	21·59	543·2	56·9	660·7	57·5	W
4 0†	22·35	520·9	57·1	691·4	57·7	W
5 0	19·71	535·7	57·3	676·5	57·9	W
6 0†	17·87	538·1	57·4	685·4	58·0	H
7 0†	17·63	539·8	57·5	678·1	57·8	H
8 0†	13·88	543·3	57·4	679·1	57·5	H
9 0	13·72	540·3	57·4	682·6	57·5	H
10 0	16·82	540·4	57·3	673·1	57·3	H
11 0	15·64	545·3	57·3	656·3	57·5	B
12 0	15·41	538·6	57·3	661·2	57·8	B

DECLINATION. Magnet untouched, May 29ᵈ—Aug. 4ᵈ.
BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs. d.	h.	m.	Declination °	′	Bifilar. Corrected. Sc. Div.	Bifilar. Thermometer. °	Balance. Corrected. Mic. Div.	Balance. Thermometer. °	Observer's Initial.
14	13	0	25	14·82	533·3	57·0	656·1	56·9	W
	14	0		14·23	531·8	56·8	670·1	56·6	W
	15	0		14·13	532·0	56·6	667·5	56·2	W
	16	0		14·04	531·7	56·3	670·6	55·7	W
	17	0		14·18	530·3	55·9	672·9	55·0	W
	18	0		14·15	534·2	55·6	672·0	54·9	W
	19	0		12·29	534·1	55·5	668·9	54·9	B
	20	0		10·75	533·7	55·4	668·8	54·9	B
	21	0		12·36	524·6	55·2	666·7	55·0	H
	22	0		13·84	519·7	55·0	666·7	55·2	H
	23	0		18·52	521·8	55·0	663·7	55·3	H
15	0	0		22·27	527·4	55·1	653·2	55·6	B
	1	0		24·93	533·0	55·3	645·8	56·1	H
	2	0		23·96	540·9	55·8	648·3	57·0	B
	3	0		23·41	539·5	56·3	651·4	57·7	H
	4	0		21·88	541·9	56·8	664·0	58·3	H
	5	0		20·36	547·3	57·3	667·7	59·0	H
	6	0		18·30	547·9	57·9	690·5	59·5	W
	7	0		16·08	548·6	58·4	697·2	59·9	W
	8	0		15·22	554·6	58·9	690·0	60·5	W
	9	0		14·13	544·2	59·2	689·6	60·5	W
	10	0		15·65	540·2	59·3	675·5	60·0	W
	11	0		16·08	538·3	59·1	666·8	59·5	H
	12	0		15·07	537·1	58·8	658·1	58·8	H
	13	0†	25	15·56	532·6	58·4	654·8	58·2	H
	14	0†		12·82	536·2	58·0	631·5	57·6	H
	15	0		10·92	528·1	57·6	645·3	57·0	H
	16	0		13·61	529·6	57·1	659·7	56·4	H
	17	0		13·10	529·1	56·7	668·3	55·8	H
	18	0		11·30	527·6	56·2	674·2	55·5	H
	19	0		10·74	527·5	56·1	689·5	55·5	W
	20	0		11·93	525·5	56·0	688·6	55·4	W
	21	2		12·45	523·8	55·9	677·7	55·6	B
	22	0		13·52	519·6	55·8	667·4	56·1	W
	23	0		17·07	516·0	56·0	666·1	56·8	W
16	0	0		21·06	521·3	56·5	656·6	57·8	W
	1	0		23·39	538·6	57·0	648·9	58·8	W
	2	0		24·32	534·7	57·8	652·6	60·0	W
	3	0		22·57	539·8	58·7	656·5	61·2	W
	4	0		20·29	538·2	59·7	663·8	62·5	W
	5	0		18·50	540·1	60·7	657·5	63·3	W
	6	0		17·31	544·5	61·5	660·5	64·1	H
	7	0		16·12	541·8	62·1	663·1	64·5	H
	8	0		16·15	542·7	62·7	661·7	64·7	H
	9	0		16·82	541·8	63·0	653·9	64·6	H
	10	0		16·15	539·7	63·1	651·9	64·1	H
	11	0		16·05	536·3	63·0	658·2	63·5	B
	12	0†		16·86	541·9	62·7	654·9	63·3	B
	13	0†	25	16·82	549·8	62·3	618·0	62·4	B
	14	0†		10·09	528·0	61·8	608·9	61·5	B
	15	0†		11·54	525·5	61·3	624·6	60·5	B
	16	0		13·64	533·4	60·7	633·4	69·5	B
	17	0		13·69	532·3	60·0	646·2	58·3	B
	18	0		12·83	529·5	59·3	657·7	57·6	B
	19	0		12·16	528·2	59·0	674·3	57·5	H
	20	0		12·75	527·3	58·7	667·3	57·5	H

Göttingen Mean Time of Declination Obs. d.	h.	m.	Declination °	′	Bifilar. Corrected. Sc. Div.	Bifilar. Thermometer. °	Balance. Corrected. Mic. Div.	Balance. Thermometer. °	Observer's Initial.
16	21	0	25	15·02	523·1	58·4	664·4	57·7	W
	22	0		16·08	521·6	58·2	652·4	58·1	H
	23	0		19·93	513·4	58·2	654·1	58·8	H
17	0	0		23·43	522·3	58·6	649·6	59·7	H
	1	0		23·21	526·7	59·0	649·5	60·5	H
	2	0		23·25	533·0	59·6	651·3	61·1	H
	3	0		22·91	535·0	60·2	654·3	62·0	H
	4	0		20·92	538·0	60·8	659·3	62·6	H
	5	0		19·66	541·2	61·3	664·4	63·2	H
	6	0		18·57	539·2	61·9	663·6	63·3	B
	7	0		18·13	548·3	62·0	653·3	63·0	B
	8	0		17·20	547·7	62·0	654·5	62·7	B
	9	0		15·25	536·3	61·9	664·8	62·4	B
	10	0		13·49	541·5	61·7	653·9	62·0	B
	11	0†		09·71	539·5	61·4	644·4	61·5	W
	12	0†		09·54	531·0	61·0	634·4	61·1	W
	13	0†	25	08·16	524·3	60·8	635·6	60·7	W
	14	0†		20·58	535·5	60·5	592·8	60·4	W
	15	0†		14·94	534·2	60·2	618·6	60·0	W
	16	0		12·87	533·5	60·0	629·7	59·6	W
	17	0		11·64	530·1	59·7	648·7	59·1	W
	18	0		10·25	530·9	59·3	652·6	58·7	W
	19	0		11·19	526·8	59·1	649·7	58·5	B
	20	0		11·27	526·7	58·9	652·4	58·3	B
	21	0		10·90	518·2	58·7	659·5	58·5	H
	22	0		17·96	512·3	58·7	662·4	58·9	H
	23	0		17·61	516·7	58·8	651·7	59·5	H
18	0	0		19·88	515·6	59·1	644·0	60·5	H
	1	0†		23·52	523·3	59·8	640·4	61·5	H
	2	0		26·81	531·1	60·5	634·3	62·6	H
	3	0		23·39	524·1	61·4	639·8	63·6	H
	4	0		21·14	538·6	62·2	646·2	64·0	B
	5	0		18·95	544·7	62·7	657·4	64·2	B
	6	0		18·05	539·5	62·8	670·4	63·9	W
	7	0		17·02	542·1	62·8	673·7	63·5	W
	8	0		15·32	543·3	62·7	679·1	63·1	W
	9	0		12·04	535·3	62·4	680·6	62·7	W
	10	0		09·76	530·7	62·1	664·1	62·4	W
	11	0		12·75	533·4	61·9	651·5	62·0	H
	12	0		12·67	533·1	61·5	644·3	61·0	B
	13	0	25	14·44	529·4	61·1	651·5	61·2	B
	14	0		15·17	530·0	60·7	651·3	60·7	B
	15	0		15·36	531·2	60·3	646·6	60·0	B
	16	0		16·19	530·5	59·9	648·8	59·5	B
	17	0		14·80	527·6	59·5	655·2	59·0	B
	18	0		13·43	530·6	59·0	659·0	58·4	B
	19	0		10·70	525·3	58·6	668·3	58·0	W
	20	0		11·21	520·3	58·2	663·0	57·7	W
	21	0		11·72	515·7	58·0	652·9	57·5	H
	22	0		13·69	511·4	57·9	652·0	57·5	W
	23	0		16·95	510·4	57·8	646·6	57·6	H
19	0	0		20·62	516·0	57·9	651·3	58·1	W
	1	0		22·30	522·4	58·0	653·2	58·5	H
	2	0		23·24	532·1	58·5	653·4	58·9	W
	3	0		22·11	547·4	58·9	655·1	59·5	W
	4	0		18·72	543·4	59·5	666·3	60·0	W

DECLINATION. Magnet untouched, May 29d—Aug. 4d.

BIFILAR. Observed 2m after the Declination, $k=0{\cdot}000140$. BALANCE. Observed 3m after the Declination, $k=0{\cdot}0000085$.

† Extra Observations made.

July 18d 12h. A cover put over the case of the balance magnetometer, composed of four folds of thick cotton cloth.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
19	5	0	25	17·27	540·9	60·0	666·4	60·7	W
	6	0		16·57	540·6	60·6	668·5	61·2	B
	7	2		15·32	542·6	60·9	669·1	61·4	B
	8	0		16·08	538·7	61·0	666·9	61·5	W
	9	0		16·35	539·1	61·0	661·2	61·4	W
	10	0		16·01	537·9	60·9	655·9	61·2	W
	11	0		15·85	537·0	60·7	650·6	60·7	H
	12	0		15·11	536·1	60·3	647·5	60·4	H
	13	0	25	14·35	534·1	60·0	647·6	60·2	H
	14	0		14·38	533·3	59·7	648·4	59·7	H
	15	0		14·33	533·4	59·3	650·4	59·3	H
	16	0		15·85	531·6	59·0	654·4	58·9	H
	17	0		13·59	532·0	58·7	663·2	58·4	H
	18	0		11·27	530·3	58·4	663·8	58·0	H
	19	0		10·16	527·9	58·2	667·3	57·8	B
	20	0		11·14	523·2	58·0	666·1	57·5	W
	21	0		12·85	521·8	57·8	661·3	57·5	W
	22	0		15·52	519·7	57·8	666·0	57·8	W
	23	0		17·49	518·5	57·9	657·6	58·2	W
20	0	0		20·65	522·5	58·2	653·7	58·8	W
	1	0		21·50	525·0	58·8	651·6	59·5	W
	2	0		22·44	535·9	59·4	641·2	60·2	W
	3	0		21·74	539·7	60·1	637·0	61·0	W
	4	0		19·95	543·2	61·0	646·6	62·0	W
	5	0		19·37	546·3	61·9	653·1	62·9	W
	6	0		17·63	542·8	62·8	650·5	63·6	H
	7	0		17·36	543·4	63·5	645·2	64·3	H
	8	0		15·76	543·5	64·1	646·9	64·6	H
	9	2		16·12	543·4	64·2	650·1	64·5	H
	10	0		16·21	543·8	64·1	647·1	64·2	H
	11	0		14·20	540·8	63·8	647·8	63·7	W
	12	0		14·71	538·1	63·3	647·2	63·2	W
21	13	0	25	13·94	535·4	59·8	658·0	59·9	H
	14	0		13·63	537·7	59·8	652·5	60·0	H
	15	0		13·12	537·8	59·8	643·7	60·1	H
	16	0		12·62	535·5	59·9	647·3	60·2	H
	17	0		12·80	533·4	59·9	648·3	60·2	H
	18	0		12·48	533·6	59·9	644·9	60·2	H
	19	0		11·49	531·1	59·9	649·9	60·2	W
	20	0		10·68	528·8	60·0	652·2	60·2	W
	21	0		12·13	525·5	60·0	654·5	60·5	W
	22	0		12·95	523·2	60·3	645·9	60·8	W
	23	0		14·87	521·3	60·8	646·1	61·4	W
22	0	0		17·06	522·4	61·3	641·1	62·2	W
	1	0		18·32	522·8	62·1	637·7	63·1	W
	2	0		18·61	526·8	63·0	639·4	64·2	W
	3	0		17·42	530·9	63·9	638·7	65·3	W
	4	0		16·55	535·1	64·9	634·0	66·4	W
	5	0		16·13	538·7	66·0	648·2	67·4	W
	6	3		16·15	541·1	67·0	653·7	68·2	D
	7	0		16·82	542·3	67·9	656·7	69·0	D
	8	0		17·24	544·2	68·7	651·3	69·5	D
	9	0		17·31	540·1	69·3	653·6	69·9	D
	10	0		16·10	535·0	69·5	650·8	69·5	H
	11	0		14·73	531·8	69·5	652·1	69·5	W
	12	0		14·80	534·6	69·0	644·8	69·0	W

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
22	13	0	25	14·77	534·9	68·6	644·9	68·4	W
	14	0		14·67	534·8	67·9	642·9	67·6	W
	15	0		13·97	533·5	67·3	646·3	67·0	W
	16	0		14·08	533·0	66·7	649·2	66·1	W
	17	0		14·04	532·2	66·0	657·9	65·4	W
	18	0		12·78	533·1	65·5	660·6	64·5	W
	19	0		12·09	532·2	65·0	661·6	64·0	H
	20	0		12·29	529·2	64·5	665·0	63·6	H
	21	0		14·17	525·3	64·0	660·9	63·5	H
	22	0		16·87	523·4	63·9	653·1	63·5	H
	23	0		18·47	523·0	63·8	650·2	63·9	H
23	0	0		20·85	523·8	64·2	640·1	65·0	H
	1	0		21·27	528·4	65·0	636·6	66·2	H
	2	0		22·57	531·3	66·2	636·9	67·7	H
	3	0		21·56	537·8	67·4	632·0	69·0	H
	4	0		20·50	538·1	68·5	631·3	70·0	H
	5	0		18·79	535·3	69·7	641·9	70·8	H
	6	0		17·73	535·5	70·3	638·9	71·5	W
	7	0		17·96	538·8	71·0	644·9	72·0	W
	8	0		18·16	539·1	71·5	650·7	72·4	W
	9	0		15·76	539·2	71·7	656·3	72·5	W
	10	0		16·08	536·4	71·7	652·5	72·3	W
	11	0		16·36	536·0	71·4	648·9	72·0	H
	12	0		15·47	534·4	71·1	646·4	71·5	H
	13	0	25	15·49	534·5	70·9	646·6	71·2	H
	14	0		15·17	532·3	70·7	645·4	70·7	H
	15	0		15·07	532·0	70·2	645·7	70·2	H
	16	0		14·73	533·2	69·9	651·1	69·8	H
	17	0		15·51	531·6	69·4	646·4	69·3	H
	18	0		12·72	530·5	69·0	650·2	68·9	H
	19	0		12·63	529·7	68·8	654·1	68·5	W
	20	0		12·11	529·7	68·6	658·0	68·2	W
	21	0		11·64	528·5	68·4	660·7	68·0	W
	22	0		12·31	525·1	68·2	654·5	68·0	W
	23	0		14·77	522·2	68·1	647·4	68·0	W
24	0	0		19·24	519·8	68·0	640·3	67·8	W
	1	0		21·53	521·1	67·8	638·7	67·7	W
	2	0		22·24	523·7	67·7	649·8	67·6	W
	3	0		20·77	532·9	67·7	650·9	67·7	W
	4	0		20·38	539·2	67·7	649·2	67·9	W
	5	0		18·79	533·8	67·8	660·1	68·0	W
	6	0		17·26	534·3	67·9	661·4	68·2	H
	7	0		16·39	540·8	68·0	654·9	68·2	H
	8	0		16·80	538·5	68·0	653·1	68·3	W
	9	0		16·50	537·8	68·0	657·0	68·3	H
	10	0		15·78	539·0	68·0	655·4	68·2	W
	11	0		15·69	536·5	68·0	657·8	68·2	W
	12	0		15·47	535·6	67·9	655·9	68·1	W
	13	0	25	14·80	534·9	67·9	655·0	68·0	D
	14	0		13·93	540·6	67·8	647·4	67·7	D
	15	0		10·95	540·5	67·7	649·7	67·7	D
	16	0		10·11	539·8	67·4	645·8	67·4	D
	17	0		10·90	545·6	67·2	644·1	67·4	D
	18	0		08·31	539·3	67·0	644·9	67·0	B
	19	0		13·02	538·2	66·7	611·8	66·7	B
	20	0		16·36	519·0	66·5	629·4	66·5	B

DECLINATION. Magnet untouched, May 29d—Aug. 4d.

BIFILAR. Observed 2^m after the Declination, $k = 0{\cdot}000140$. BALANCE. Observed 3^m after the Declination $k = 0{\cdot}000085$.

July 24d 18h +. The box of the balance magnetometer lifted and an insect removed from the needle.

Göttingen Mean Time of Declination Obs. d.	h.	m.	DECLINATION. °	′	BIFILAR. Corrected. Sc. Div.	BIFILAR. Thermometer. °	BALANCE. Corrected. Mic. Div.	BALANCE. Thermometer. °	Observer's Initial.
24	21	0	25	23·83	546·1	66·3	585·8	66·3	H
	22	0		20·02	525·1	66·2	597·0	66·5	H
	23	0		19·12	529·7	66·2	599·9	66·8	H
25	0	0		22·37	533·3	66·7	604·1	67·2	H
	1	0		27·58	524·7	66·9	624·4	67·7	H
	2	0		25·51	517·6	67·3	663·9	68·0	W
	3	0		21·68	540·7	67·6	656·9	68·2	W
	4	0		24·50	526·8	67·8	694·9	68·4	W
	5	0		21·24	536·7	67·9	696·7	68·5	B
	6	0		19·46	543·2	68·2	719·8	68·8	H
	7	0		20·23	544·4	68·4	710·0	69·0	H
	8	0		08·09	533·5	68·6	731·2	69·0	D
	9	0		13·22	545·0	68·6	675·9	69·0	D
	10	0		16·03	538·4	68·6	666·4	69·0	B
	11	0†		13·64	535·8	68·6	628·3	68·8	W
	12	0		15·91	529·5	68·3	620·5	68·5	W
	13	0†	25	19·66	532·1	68·0	600·8	68·0	W
	14	0		12·72	528·8	67·7	622·1	67·7	W
	15	0		12·65	531·8	67·4	629·8	67·3	W
	16	0		12·18	525·7	67·0	638·6	66·9	W
	17	0		13·81	520·6	66·7	640·9	66·4	W
	18	0		14·38	518·9	66·2	637·3	65·9	W
	19	0		18·38	523·9	65·9	631·8	65·4	B
	20	0		17·80	522·5	65·6	625·8	65·0	B
	21	0		13·30	517·8	65·2	627·6	64·7	H
	22	0		15·31	517·6	65·0	631·0	64·5	H
	23	0		16·12	514·2	64·8	632·3	64·5	H
26	0	0		19·02	519·5	64·7	632·9	64·5	B
	1	0		19·48	525·6	64·7	637·0	64·7	H
	2	0		21·50	532·6	64·9	640·5	65·2	B
	3	0		21·16	529·7	65·4	644·9	65·8	B
	4	0		18·90	548·9	65·9	635·4	66·5	B
	5	0		19·15	536·3	66·6	659·5	67·3	B
	6	0		18·32	541·0	67·0	668·9	67·7	W
	7	0		15·99	546·3	67·4	672·7	67·9	W
	8	0		18·23	545·1	67·7	667·8	68·0	W
	9	0		17·49	540·4	67·6	663·9	68·0	W
	10	0		16·25	534·6	67·5	659·5	67·7	W
	11	0		15·91	539·3	67·2	646·8	67·5	H
	12	0†		12·11	535·8	67·0	631·0	67·1	H
	13	0	25	14·35	531·4	66·8	625·5	67·0	H
	14	0		14·46	529·2	66·6	634·7	66·6	H
	15	0		14·41	531·0	66·3	635·9	66·3	H
	16	0		13·05	528·4	66·0	642·9	66·0	H
	17	0		13·16	531·7	65·8	643·5	65·5	H
	18	0		14·85	528·6	65·3	645·2	65·2	H
	19	0		17·42	532·6	65·2	638·8	64·9	W
	20	0		17·04	521·5	65·0	642·1	64·7	W
	21	4		19·19	516·2	64·9	631·7	64·7	B
	22	0		22·24	512·2	64·9	629·9	65·0	W
	23	0		21·34	515·5	65·0	627·1	65·4	W
27	0	0		22·03	514·7	65·6	616·3	66·1	W
	1	0†		26·47	531·5	66·1	621·6	66·9	W
	2	0		21·26	537·1	66·8	631·6	67·7	W
	3	0		20·97	543·2	67·6	645·6	68·5	W
	4	0		21·19	554·9	68·4	666·4	69·3	W

Göttingen Mean Time of Declination Obs. d.	h.	m.	DECLINATION. °	′	BIFILAR. Corrected. Sc. Div.	BIFILAR. Thermometer. °	BALANCE. Corrected. Mic. Div.	BALANCE. Thermometer. °	Observer's Initial.
27	5	0†	25	12·73	544·8	69·0	715·0	70·0	W
	6	0†		18·25	542·9	69·7	700·6	70·5	H
	7	0		18·25	555·1	70·1	683·3	71·0	H
	8	0		09·46	551·0	70·3	710·8	71·1	H
	9	0		16·95	536·9	70·5	678·4	70·9	H
	10	0		16·68	540·2	70·3	650·1	70·7	H
	11	0†		14·38	538·9	70·3	634·8	70·3	B
	12	0		12·33	527·3	69·9	616·4	70·0	B
28	13	0	25	17·68	536·6	66·1	627·6	65·5	W
	14	0†		20·90	535·5	65·7	603·9	65·0	W
	15	0†		17·51	533·5	65·1	575·9	64·4	W
	16	0†		12·18	524·2	64·7	600·9	63·8	W
	17	0		14·87	525·8	64·0	621·2	63·1	W
	18	0		12·73	530·7	63·6	629·6	62·5	W
	19	5		12·62	529·7	63·0	630·4	61·9	B
	20	0		12·38	523·8	62·6	639·4	61·4	B
	21	0		14·44	519·4	62·1	647·0	61·2	H
	22	0		16·08	514·1	61·9	641·0	61·2	H
	23	0		17·80	512·3	61·8	636·5	61·5	H
29	0	0		20·87	516·1	61·8	626·9	61·7	B
	1	0		22·84	523·2	61·9	623·7	62·2	H
	2	0		24·12	532·6	62·2	626·2	62·4	B
	3	0		22·94	540·4	62·5	634·5	62·8	B
	4	0		22·00	537·2	62·9	645·6	63·4	W
	5	0		19·44	539·5	63·4	651·6	63·8	B
	6	0		18·03	536·5	63·7	657·5	64·1	W
	7	0		14·77	539·1	64·0	653·1	64·3	W
	8	0		15·01	542·9	64·0	646·6	64·0	W
	9	0		16·19	537·4	64·0	644·1	64·1	W
	10	0		16·15	536·5	64·0	642·0	64·2	W
	11	0		15·56	536·4	63·9	637·7	64·0	H
	12	0		16·35	535·8	63·7	634·1	63·5	H
	13	0	25	15·65	534·1	63·3	636·4	63·2	H
	14	0		15·76	534·3	63·0	635·7	62·7	H
	15	0		15·11	533·0	62·7	636·1	62·1	H
	16	0		15·62	530·9	62·1	640·0	61·4	H
	17	0		12·85	530·0	61·6	642·5	60·7	H
	18	0		10·80	527·9	61·1	647·1	60·2	H
	19	0		09·37	525·7	60·6	642·6	59·6	W
	20	0		11·52	522·4	60·0	636·5	59·6	W
	21	0		12·22	520·9	59·7	624·2	58·8	B
	22	0		12·85	519·3	59·4	616·7	58·5	W
	23	0		16·79	513·7	59·1	627·7	58·5	W
30	0	0		18·68	521·4	59·0	622·7	58·5	W
	1	0		19·51	522·9	59·0	620·6	58·6	W
	2	0		19·78	529·0	59·0	616·5	58·8	W
	3	0		19·51	533·7	58·9	620·3	58·7	W
	4	0		18·81	533·5	58·9	624·4	58·7	W
	5	0		17·67	536·7	58·8	631·8	58·6	W
	6	0		16·28	540·8	58·8	634·2	58·6	H
	7	0		16·01	543·4	58·8	634·4	58·6	H
	8	0		15·36	544·2	58·7	635·3	58·6	H
	9	0		15·29	542·6	58·7	642·3	58·6	H
	10	0		14·99	542·0	58·6	640·0	58·5	H
	11	0		12·06	538·4	58·6	639·5	58·4	B
	12	0		12·15	534·7	58·4	626·6	58·3	B

DECLINATION. Magnet untouched, May 29ᵈ—Aug. 4ᵈ.
BIFILAR. Observed 2ᵐ after the Declination $k = 0·000140$. BALANCE. Observed 3ᵐ after the Declination, $k = 0·0000085$.

† Extra Observations made.
July 26ᵈ 2ʰ 30ᵐ. The balance needle vibrated considerably by the accidental approach of a mass of steel, which has affected the tim[e] of vibration, and seems also to have affected the position of the needle.

Göttingen Mean Time of Declination Obs. d.	h.	m.	DECLINATION. °	′	BIFILAR. Corrected. Sc. Div.	BIFILAR. Thermometer. °	BALANCE. Corrected. Mic. Div.	BALANCE. Thermometer. °	Observer's Initial.
30	13	0	25	12·92	532·9	58·3	628·7	58·2	B
	14	0		14·84	537·3	58·2	618·2	58·2	B
	15	0		15·52	532·4	58·1	620·9	58·1	B
	16	0		12·83	531·1	58·0	623·7	58·0	B
	17	0		13·50	530·0	57·9	634·1	57·9	B
	18	0		12·95	527·4	57·8	634·6	57·7	B
	19	0		18·34	527·9	57·7	619·4	57·5	H
	20	0		17·26	530·9	57·5	601·0	57·2	H
	21	0		15·52	521·1	57·4	606·5	57·2	W
	22	0		18·00	519·0	57·3	604·5	57·2	H
	23	0		21·41	519·1	57·3	612·5	57·8	H
31	0	0		22·92	524·0	57·6	597·5	58·0	H
	1	0		23·98	530·1	57·8	596·0	58·3	H
	2	0†		27·42	559·9	58·2	597·1	58·7	H
	3	0†		24·05	545·3	58·8	620·1	59·5	H
	4	0†		25·16	567·7	59·1	619·7	59·7	H
	5	0†		22·22	547·5	59·4	636·0	60·0	H
	6	0†		20·30	544·3	59·7	632·6	60·1	B
	7	0†		20·77	553·8	59·8	623·1	60·1	B
	8	0†		13·49	551·9	59·8	641·1	60·0	B
	9	0†		15·56	551·7	59·7	626·0	60·0	B
	10	0†		16·03	537·2	59·7	629·2	60·0	B
	11	0		16·15	539·0	59·6	632·6	60·0	W
	12	0†		14·38	535·7	59·4	633·3	59·7	W
	13	0†	25	11·64	532·6	59·1	639·7	59·5	W
	14	0†		10·70	530·0	59·0	639·8	59·4	W
	15	0		13·46	534·9	58·8	633·9	59·0	W
	16	0		12·78	533·5	58·7	633·9	58·7	W
	17	0		10·67	529·6	58·3	634·6	58·3	W
	18	0		10·74	525·1	58·0	634·0	58·0	W
	19	0		14·13	527·4	57·9	627·2	57·8	B
	20	0		12·60	524·6	57·8	624·6	57·6	B
	21	0		14·89	522·3	57·7	627·0	57·6	H
	22	0		17·39	518·9	57·7	625·0	57·8	H
	23	0		19·44	520·4	57·7	614·0	58·1	H
1	0	0		21·39	525·7	57·9	599·3	58·3	H
	1	0		24·60	532·7	58·1	599·8	58·6	H
	2	0		24·28	528·6	58·5	601·1	58·9	B
	3	0†		25·09	541·1	58·8	599·2	59·3	H
	4	0†		25·36	535·3	59·0	605·6	59·7	H
	5	0†		26·34	519·9	59·4	591·3	60·1	H
	6	0†		24·55	549·3	59·9	710·1	60·5	W
	7	0†		14·04	575·2	60·0	746·6	60·7	W
	8	0†		21·50	565·8	60·1	738·6	60·7	W
	9	0†		11·62	534·3	60·0	734·9	60·6	W
	10	0†		07·22	518·4	60·0	662·9	60·5	W
	11	0†		15·74	533·9	59·9	644·3	60·4	H
	12	0†		09·66	522·0	59·8	597·5	60·2	H
	13	0†	25	07·25	518·2	59·7	495·2	60·2	H
	14	0†		12·73	519·8	59·6	597·5	60·0	H
	15	0		16·62	523·2	59·4	613·8	59·7	H
	16	0		19·04	521·4	59·1	622·7	59·3	H
	17	0		15·25	525·9	58·9	615·5	59·0	H
	18	0		14·24	516·1	58·7	638·6	58·5	H
	19	0		19·98	522·5	58·3	616·9	58·3	W
	20	0		13·49	510·9	58·0	630·2	58·0	W

Göttingen Mean Time of Declination Obs. d.	h.	m.	DECLINATION. °	′	BIFILAR. Corrected. Sc. Div.	BIFILAR. Thermometer. °	BALANCE. Corrected. Mic. Div.	BALANCE. Thermometer. °	Observer's Initial.
1	21	0	25	16·35	510·4	57·9	621·0	57·9	B
	22	0		20·55	499·7	57·8	629·6	57·9	W
	23	0		22·01	503·9	57·8	628·9	58·2	W
2	0	0		22·58	504·1	58·0	627·1	58·7	W
	1	0		26·57	511·8	58·6	628·8	59·1	W
	2	0†		27·10	521·4	59·0	643·0	59·8	W
	3	0†		26·74	518·9	59·7	667·6	60·6	W
	4	0		22·01	537·1	60·4	681·2	61·4	W
	5	0		19·41	528·2	60·9	680·7	62·0	W
	6	0		18·54	540·1	61·3	669·6	62·5	H
	7	0		15·94	548·0	62·0	662·7	62·8	H
	8	0		14·53	549·1	62·2	665·3	63·0	H
	9	0		14·08	544·3	62·2	667·3	63·0	H
	10	0		13·63	539·5	62·2	642·7	62·7	H
	11	0†		14·51	543·4	62·0	588·9	62·3	B
	12	0†		21·29	523·4	61·7	511·3	61·9	B
	13	0†	25	14·50	525·5	61·3	527·0	61·3	B
	14	0†		16·65	524·9	60·9	556·8	60·8	B
	15	0†		07·37	517·5	60·4	556·1	60·0	B
	16	0		12·25	524·9	59·9	586·5	59·4	B
	17	0		13·19	522·6	59·3	606·1	58·5	B
	18	0		12·83	524·6	58·7	610·7	57·8	B
	19	0		15·04	520·7	58·1	616·5	57·2	H
	20	0		13·07	518·2	57·8	631·3	56·7	H
	21	0		18·13	510·6	57·3	632·6	56·7	W
	22	0		18·57	511·4	57·0	619·9	56·7	H
	23	0		16·59	510·1	57·1	616·7	57·2	H
3	0	0		19·46	506·0	57·3	618·8	58·0	H
	1	0		24·26	512·6	57·9	612·7	58·5	H
	2	0†		25·06	535·6	58·5	619·8	59·2	H
	3	0†		21·73	530·4	59·0	628·0	59·7	H
	4	0		19·79	537·1	59·3	641·8	60·0	H
	5	0		18·77	537·4	59·7	648·5	60·2	H
	6	0†		16·18	541·8	59·8	659·1	60·0	B
	7	0		12·25	543·2	59·8	682·5	60·0	W
	8	0		15·72	533·9	59·7	680·4	60·0	H
	9	0		14·11	537·6	59·6	663·7	59·7	B
	10	0		12·15	541·8	59·3	644·2	59·5	B
	11	0		12·82	527·9	59·0	618·7	59·3	W
	12	0		13·63	522·2	58·9	620·6	59·0	W
4	13	0	25	13·03	528·5	60·4	620·8	60·4	H
	14	0		11·96	529·2	60·1	618·2	60·2	H
	15	0†		15·27	524·5	59·9	604·4	59·9	H
	16	0		14·10	529·0	59·7	614·2	59·7	H
	17	0		12·85	534·8	59·4	615·9	59·3	H
	18	0†		18·48	525·5	59·0	618·6	59·0	H
	19	0†		20·72	527·8	58·8	609·4	58·5	W
	20	0		14·28	526·5	58·6	612·6	58·3	W
	21	6		12·85	514·4	58·3	628·5	58·2	B
	22	0		15·27	518·1	58·3	630·9	58·3	W
	23	0		16·23	518·1	58·4	635·3	58·4	W
5	0	0		18·97	520·2	58·7	640·5	59·0	W
	1	0		21·00	521·9	59·1	636·1	59·7	W
	2	0		19·40	541·0	59·8	628·6	60·5	W
	3	0		18·90	538·1	60·6	646·4	61·4	W
	4	0		16·53	532·5	61·3	654·0	62·4	W

DECLINATION. Torsion removed, Aug. 4d 22h, + 1°. Effect of + 10° of Torsion = − 0′·84.

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·0000085.

† Extra Observations made.

Aug. 4d 23h—5d 6h. Magnet with short scale used in the declinometer.

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
5	5	0	25 18·30	536·4	62·2	672·2	63·1	W
	6	0	15·93	542·6	63·0	660·7	63·7	H
	7	0	20·72	538·5	63·3	649·8	64·2	H
	8	0	17·06	538·8	63·7	647·1	64·3	W
	9	0	16·15	535·6	63·8	653·1	64·3	H
	10	0	16·19	533·0	63·7	650·4	64·1	H
	11	0	16·60	534·4	63·5	643·9	63·8	B
	12	0	16·35	534·6	63·2	635·2	63·3	B
	13	0	25 13·52	528·4	62·9	623·9	63·0	B
	14	0	15·91	529·1	62·5	623·3	62·5	B
	15	0	15·58	530·3	62·1	632·4	62·0	B
	16	0	15·41	529·9	61·8	639·2	61·5	B
	17	0	14·40	529·3	61·4	642·8	61·1	B
	18	0	14·57	527·9	61·1	648·5	60·8	B
	19	0	13·99	526·1	60·8	648·0	60·5	H
	20	0	12·53	524·0	60·6	652·6	60·2	H
	21	0	12·04	517·8	60·2	648·7	59·8	W
	22	0	15·76	514·4	59·9	637·6	59·5	H
	23	0	16·80	518·4	59·8	632·4	59·5	H
6	0	0	18·47	522·2	59·6	631·9	59·5	H
	1	0	20·50	529·1	59·5	635·2	59·7	H
	2	0	21·16	531·2	59·8	638·7	60·0	H
	3	0	21·14	532·3	60·0	644·2	60·5	H
	4	0	18·63	539·1	60·3	653·1	60·7	H
	5	0	18·16	535·6	60·3	664·1	60·7	H
	6	0	17·31	539·7	60·6	664·3	60·6	B
	7	0	16·82	531·4	60·4	661·7	60·3	B
	8	0	16·92	533·0	60·2	655·5	60·0	B
	9	0	16·60	533·0	59·9	650·9	59·8	B
	10	0	17·26	534·2	59·8	647·7	59·5	B
	11	0	17·29	533·3	59·6	646·0	59·4	W
	12	0	16·86	532·4	59·3	644·4	59·0	W
	13	0	25 17·63	530·8	59·0	643·8	58·7	W
	14	0	17·70	531·5	58·8	643·0	58·4	W
	15	0	19·31	531·1	58·5	643·2	58·3	W
	16	0	17·49	529·7	58·3	646·5	58·1	W
	17	0	17·53	531·6	58·0	648·3	58·0	W
	18	0	16·06	530·8	57·9	655·4	57·7	W
	19	0	13·97	530·3	57·8	652·7	57·5	B
	20	0	12·78	527·4	57·7	655·1	57·4	B
	21	0	14·08	521·2	57·5	655·3	57·3	H
	22	0	14·15	519·6	57·4	652·6	57·3	H
	23	0	16·82	519·4	57·4	646·9	57·6	H
7	0	0	19·58	520·6	57·8	645·8	58·0	B
	1	0	22·06	524·3	57·9	638·6	58·4	H
	2	0	22·87	528·3	58·3	632·3	58·7	B
	3	0	22·13	532·4	58·7	642·2	59·0	B
	4	0	20·25	530·5	58·9	649·6	59·5	W
	5	0	18·30	529·4	59·3	649·9	59·8	B
	6	0	16·65	532·6	59·6	652·1	60·0	W
	7	0	15·67	534·4	59·7	653·1	60·0	W
	8	0	16·08	534·7	59·7	650·6	59·8	W
	9	0	16·65	534·3	59·4	649·1	59·6	W
	10	0	17·07	534·3	59·1	646·4	59·3	W
	11	0	17·42	532·9	58·9	644·5	59·0	H
	12	0	17·63	532·2	58·7	644·3	58·6	H
7	13	0	25 18·00	531·6	58·4	643·7	58·4	H
	14	0	17·80	533·0	58·1	644.2	58·2	H
	15	0	17·24	531·9	57·9	645·3	58·0	H
	16	0	17·37	533·1	57·7	644·7	57·6	H
	17	0	16·06	531·5	57·3	649·0	57·2	H
	18	0	14·89	531·0	57·2	652·2	57·0	H
	19	0	14·40	531·7	57·0	653·6	56·9	W
	20	0	14·43	529·7	56·9	653·0	56·7	W
	21	0	15·34	525·5	56·9	654·9	56·9	B
	22	0	17·24	524·7	56·9	650·1	57·0	W
	23	0	19·51	522·9	57·0	647·8	57·4	W
8	0	0	22·78	524·8	57·4	643·6	57·9	W
	1	0	25·36	525·5	57·8	639·5	58·4	W
	2	0	25·63	531·1	58·3	645·7	59·0	W
	3	0	24·15	536·4	58·7	644·7	59·5	W
	4	0	19·75	538·3	59·0	657·9	59·8	W
	5	0	19·58	535·2	59·3	671·9	60·0	W
	6	0	18·27	536·1	59·4	671·5	60·1	H
	7	0	17·49	539·0	59·5	663·5	60·2	H
	8	0	16·89	540·2	59·7	657·2	60·2	H
	9	0	17·15	538·0	59·7	656·7	60·1	H
	10	0	17·22	536·8	59·5	652·1	59·9	H
	11	0	15·89	538·5	59·3	642·9	59·5	B
	12	0	13·52	542·6	59·1	637·5	59·2	B
	13	0	25 16·90	532·6	58·9	637·2	59·0	B
	14	0	16·90	535·3	58·7	636·5	58·6	B
	15	0	16·80	534·8	58·4	640·0	58·3	B
	16	0	15·92	533·8	58·1	641·4	58·0	B
	17	0	15·59	533·1	57·9	646·9	57·7	B
	18	0	16·26	532·7	57·7	646·8	57·4	B
	19	0	14·06	534·7	57·3	646·7	57·0	H
	20	0	15·01	533·9	57·0	650·6	57·0	H
	21	0	15·52	534·9	57·0	647·4	56·9	W
	22	0	16·32	531·4	56·9	648·3	57·0	H
	23	0	18·13	525·4	57·0	644·9	57·2	H
9	0	0	22·03	524·5	57·2	641·9	57·7	H
	1	0	22·89	523·6	57·7	645·8	58·3	H
	2	0	27·48	521·3	58·1	659·7	59·0	H
	3	0†	26·82	540·9	58·7	667·1	59·5	H
	4	0†	28·25	572·4	59·1	711·2	60·0	H
	5	0†	22·89	537·8	59·5	769·3	60·2	H
	6	0†	22·50	573·4	59·8	725·4	60·3	B
	7	0†	21·93	559·6	59·8	752·5	60·3	B
	8	0	18·55	549·2	59·9	727·2	60·2	B
	9	0†	11·98	558·1	59·7	669·0	60·0	B
	10	0	14·96	529·2	59·4	659·0	59·7	B
	11	0†	18·65	539·6	59·1	623·0	59·5	W
	12	0†	20·29	510·6	58·9	538·4	59·1	W
	13	0†	25 12·76	526·3	58·7	580·5	58·9	W
	14	0	12·76	520·4	58·3	602·3	58·4	W
	15	0	10·43	522·0	58·0	594·1	57·9	W
	16	0	14·67	520·2	57·7	586·8	57·3	W
	17	0	15·14	525·2	57·1	613·3	56·7	W
	18	0	15·59	522·3	56·7	629·6	56·1	W
	19	0†	13·44	515·6	56·2	635·0	55·6	B
	20	0	15·67	512·7	55·8	638·9	55·2	B

DECLINATION. Magnet untouched, Aug. 5^d—Oct. 6^d.

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0·0000085$.

† Extra Observations made.

Aug. 5^d 6^h + Deflecting bar vibrated in the declinometer box.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
9	21	2	25	16·19	501·5	55·4	643·2	55·0	H
	22	0		19·41	511·4	55·2	635·6	55·2	H
	23	0		18·81	520·8	55·2	640·2	55·5	H
10	0	0		20·63	525·7	55·6	638·3	56·0	H
	1	0		23·32	529·0	56·0	639·2	56·6	H
	2	0		24·10	529·2	56·7	639·8	57·5	H
	3	0		20·55	538·6	57·5	645·5	58·4	B
	4	0		18·81	539·0	58·2	651·5	59·1	B
	5	0		18·47	539·6	58·9	651·7	59·7	B
	6	0		17·73	538·1	59·3	648·5	60·1	W
	7	0		17·29	543·0	60·0	648·8	60·8	W
	8	0		17·96	540·7	60·6	649·9	61·2	W
	9	0		16·59	544·8	60·9	635·3	61·4	W
	10	0		17·46	536·4	60·9	634·4	61·2	W
	11	0		16·25	532·4	60·8	636·4	61·0	H
	12	0†		19·58	537·0	60·5	595·6	60·7	H
11	13	0	25	13·67	531·6	60·1	589·7	60·2	B
	14	0		12·76	524·8	59·9	595·6	60·0	B
	15	0		13·59	527·5	59·7	595·6	59·7	B
	16	0		14·70	525·6	59·5	612·9	59·5	B
	17	0		16·16	527·9	59·2	618·4	59·2	B
	18	0		14·10	526·4	59·0	629·3	59·0	B
	19	0		13·30	524·4	58·8	638·2	58·7	H
	20	0		13·61	521·2	58·7	642·0	58·6	H
	21	0		14·44	522·3	58·7	640·4	58·6	W
	22	0		17·19	525·6	58·7	634·0	59·0	H
	23	0		19·82	524·9	58·8	634·9	59·5	H
12	0	0		22·10	528·7	59·1	630·4	60·1	H
	1	0		23·61	530·6	59·9	628·4	60·7	H
	2	0		23·11	531·4	60·5	629·3	61·5	H
	3	0		21·30	535·4	61·4	636·2	62·5	H
	4	0		20·13	535·6	62·1	639·4	63·2	H
	5	0		19·32	533·3	62·8	636·3	63·7	H
	6	0		18·10	532·8	63·6	637·7	64·1	B
	7	0		17·49	533·4	63·9	630·0	64·3	B
	8	0		17·39	539·8	64·0	629·6	64·4	B
	9	0		15·98	536·9	64·0	639·7	64·2	B
	10	0†		12·04	544·3	63·9	632·7	63·8	B
	11	0		15·74	533·0	63·5	635·7	63·3	W
	12	0		15·91	534·2	63·0	632·9	62·9	W
	13	0	25	16·57	531·9	62·6	634·4	62·3	W
	14	0		15·45	528·5	62·0	635·6	61·7	W
	15	0†		19·91	532·3	61·6	601·5	61·0	W
	16	0†		10·68	525·7	61·1	611·9	60·7	W
	17	0		14·64	527·2	60·8	617·7	60·3	W
	18	0		11·96	526·1	60·3	625·3	59·8	W
	19	0		13·52	523·2	59·9	626·0	59·2	B
	20	0		14·50	528·6	59·6	622·0	58·8	B
	21	0		15·92	523·4	59·1	625·9	58·5	H
	22	0		19·05	523·9	58·9	630·8	58·5	H
	23	0		20·53	524·2	58·9	627·7	58·7	H
13	0	0		21·16	528·3	59·0	609·8	59·0	B
	1	0		24·96	531·9	59·2	612·9	59·5	H
	2	0		23·54	535·5	59·8	627·1	60·3	B
	3	0		22·33	536·5	60·3	626·9	61·0	H
	4	0		20·09	538·4	61·0	628·6	62·0	H
13	5	0	25	18·67	531·6	61·5	635·6	62·1	H
	6	0		17·31	537·6	61·8	636·8	62·3	W
	7	0		17·74	533·0	61·9	632·3	62·4	W
	8	0		17·54	536·7	62·0	627·2	62·4	W
	9	0		17·17	537·4	61·9	628·5	62·2	W
	10	0		16·86	536·6	61·8	627·6	62·0	W
	11	0		17·27	535·0	61·7	627·0	61·7	H
	12	0		16·65	534·3	61·3	627·3	61·5	H
	13	0	25	16·60	533·7	61·1	626·5	61·2	H
	14	0		16·36	533·3	61·0	626·5	61·0	H
	15	0		16·08	532·5	60·8	630·2	60·7	H
	16	0		15·78	531·8	60·5	632·4	60·5	H
	17	0		14·60	529·8	60·1	635·3	60·0	H
	18	0		13·93	528·5	59·9	633·1	59·5	H
	19	0		13·46	527·7	59·6	635·0	59·0	W
	20	0		14·26	525·7	59·2	637·0	58·8	W
	21	0		14·73	523·7	59·0	635·8	58·6	B
	22	0		16·82	523·5	58·8	638·7	58·7	W
	23	0		20·06	524·5	58·9	639·9	58·9	W
14	0	0		21·70	528·7	59·0	639·0	59·5	W
	1	0		23·56	532·9	59·6	638·2	60·2	W
	2	0		23·09	537·0	60·1	643·4	60·8	W
	3	0		22·33	537·1	60·8	641·4	61·5	W
	4	0		20·09	539·7	61·7	637·4	62·5	W
	5	0		19·17	536·3	62·4	639·0	63·2	W
	6	0		17·76	537·9	62·9	635·1	63·7	H
	7	0		17·68	538·1	63·2	636·3	64·0	H
	8	0		16·52	537·0	63·4	638·7	64·0	H
	9	0		14·96	540·6	63·3	642·1	63·6	H
	10	0		16·82	539·4	63·1	636·4	63·2	H
	11	0		16·89	536·7	62·8	633·7	62·7	B
	12	0		16·28	534·7	62·3	633·3	62·3	B
	13	0	25	16·25	534·3	62·0	634·3	61·8	B
	14	0		15·86	534·4	61·7	635·8	61·4	B
	15	0		15·86	534·0	61·3	636·1	61·0	B
	16	0		16·15	535·4	60·9	636·5	60·7	B
	17	0		14·73	533·9	60·7	640·8	60·3	B
	18	0		13·07	530·6	60·3	649·1	60·0	B
	19	0		12·13	529·1	60·0	646·7	59·7	H
	20	0		12·40	524·5	59·8	648·9	59·5	H
	21	0		14·04	520·9	59·5	648·6	59·1	W
	22	0		17·87	518·7	59·2	638·7	59·0	H
	23	0		19·93	518·7	59·0	625·4	59·0	H
15	0	0		21·32	522·0	58·9	617·3	58·8	H
	1	0		21·77	528·7	58·9	617·3	58·7	H
	2	0		21·24	531·9	58·8	626·4	58·7	H
	3	0		20·89	535·5	58·8	630·9	58·7	H
	4	0		19·84	534·2	58·7	631·8	58·7	H
	5	0		18·16	533·7	58·7	637·3	58·7	H
	6	0		17·06	542·4	58·8	638·5	58·9	B
	7	0		16·25	542·0	58·9	637·4	59·1	B
	8	0		16·60	543·8	59·0	634·5	59·3	B
	9	0		16·86	542·0	59·1	634·6	59·5	B
	10	0		16·86	540·6	59·1	632·3	59·5	B
	11	0		15·54	539·9	59·1	631·8	59·5	W
	12	0		13·16	534·8	59·0	627·3	59·3	W

DECLINATION. Magnet untouched, Aug. 5d—Oct. 6d.

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
15	13	0	25	15·58	534·9	58·9	627·5	59·0	W
	14	0		15·29	534·5	58·8	629·0	58·8	W
	15	0		14·71	534·3	58·6	632·7	58·5	W
	16	0		14·64	533·4	58·3	636·2	58·2	W
	17	0		14·31	533·0	58·0	640·0	57·9	W
	18	0		13·67	531·0	57·8	643·5	57·5	W
	19	0		14·17	526·9	57·6	641·7	57·2	B
	20	0		14·38	526·3	57·4	641·8	57·0	B
	21	0		16·13	522·4	57·2	639·1	57·0	H
	22	0		17·74	517·3	57·2	633·4	57·4	H
	23	0		20·97	518·7	57·4	619·8	58·0	H
16	0	0		24·15	523·2	58·1	615·7	58·9	B
	1	0		25·51	529·1	58·8	618·0	60·0	H
	2	0		24·96	535·7	60·0	622·7	61·3	B
	3	0		23·66	534·5	61·0	632·7	62·5	H
	4	0		22·13	536·0	61·9	632·2	63·0	H
	5	0		20·03	537·9	62·4	640·2	63·5	H
	6	0		18·92	551·9	62·8	641·1	63·5	W
	7	0		17·83	545·9	62·8	647·2	63·3	W
	8	0		17·29	536·6	62·7	649·5	63·0	W
	9	0		16·46	545·3	62·3	649·2	62·7	W
	10	0†		09·59	535·5	62·0	651·2	62·4	W
	11	0†		05·79	532·1	61·7	635·1	61·9	H
	12	0		15·31	537·2	61·4	625·6	61·5	H
	13	0	25	14·65	539·0	61·0	618·5	61·2	H
	14	0		15·29	540·3	60·8	611·2	60·8	H
	15	0		10·70	532·5	60·4	622·5	60·3	H
	16	0		11·82	534·2	60·1	631·8	59·9	H
	17	0		14·43	534·7	59·8	635·0	59·7	H
	18	0		13·39	531·8	59·5	640·5	59·5	H
	19	0		12·40	527·3	59·2	644·5	58·9	W
	20	0		11·12	520·6	58·9	639·8	58·6	W
	21	0		12·65	513·3	58·8	640·3	58·4	B
	22	0		15·04	510·7	58·5	634·5	58·2	W
	23	0		18·84	514·7	58·3	620·5	58·0	W
17	0	0		22·78	519·6	58·0	608·7	57·9	W
	1	0		24·96	527·6	57·9	610·6	57·8	W
	2	0		25·11	539·1	57·8	615·2	57·5	W
	3	0		23·36	537·6	57·7	631·6	57·4	W
	4	0		21·54	538·6	57·5	643·8	57·2	W
	5	0		18·84	540·4	57·4	660·7	57·1	W
	6	0		18·21	541·0	57·2	663·9	57·2	H
	7	0		19·37	545·1	57·2	666·4	57·5	H
	8	0		18·01	544·2	57·4	666·6	57·7	H
	9	0		18·20	535·0	57·7	657·4	57·7	H
	10	0		15·71	538·9	57·7	639·3	57·7	H
	11	0		16·05	541·9	57·6	625·0	57·5	B
	12	0		17·42	535·7	57·4	617·9	57·3	B
18	13	0		14·26	531·7	58·4	626·6	58·0	W
	14	0		14·65	532·8	57·9	628·8	57·5	W
	15	0		14·82	533·8	57·6	631·6	57·0	W
	16	0		16·12	536·0	57·1	630·2	56·6	W
	17	0		14·65	530·9	56·7	641·1	56·2	W
	18	0		13·59	532·4	56·3	646·9	55·7	W
	19	0		12·89	533·2	56·0	652·4	55·3	B
	20	0		13·39	529·0	55·7	651·4	55·0	B

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
18	21	0	25	14·60	524·8	55·4	648·0	55·0	H
	22	0		16·10	521·0	55·4	649·9	55·3	H
	23	0		20·58	517·2	55·5	636·9	55·7	H
19	0	0		22·01	522·8	56·0	625·7	56·6	B
	1	0		23·58	526·4	56·7	626·3	57·3	B
	2	0		23·90	534·8	57·1	630·6	57·8	B
	3	0		24·17	536·4	57·5	639·9	58·1	B
	4	0		21·46	535·7	57·8	635·7	58·4	B
	5	0		19·14	538·3	58·0	640·7	58·7	B
	6	0		17·49	539·0	58·3	642·0	59·0	W
	7	0		16·50	540·1	58·7	641·4	59·1	W
	8	0		16·82	542·0	58·7	635·4	59·3	W
	9	0		15·65	541·6	58·8	634·1	59·4	W
	10	0		16·08	538·6	58·9	633·4	59·5	W
	11	0		16·92	538·8	59·0	630·0	59·5	H
	12	0		16·35	537·2	59·0	628·0	59·6	H
	13	0	25	17·29	536·2	59·0	626·2	59·7	H
	14	0		17·71	536·5	59·0	617·3	59·7	H
	15	0		15·54	535·6	59·1	617·2	59·7	H
	16	0		14·99	536·0	59·1	622·2	59·6	H
	17	0		14·58	535·6	59·1	628·1	59·5	H
	18	0		13·76	532·6	59·0	633·0	59·4	H
	19	0		13·66	530·5	58·9	633·0	59·1	W
	20	0		13·90	526·9	58·8	635·9	59·0	W
	21	0		15·38	521·4	58·8	635·6	58·9	B
	22	0		17·06	520·2	58·7	635·4	58·9	W
	23	0		19·44	522·9	58·7	633·6	59·2	W
20	0	0		21·86	528·1	58·9	621·4	59·5	W
	1	0		23·51	531·2	59·2	608·4	60·0	W
	2	0		23·54	534·4	59·8	607·4	60·7	W
	3	0		21·44	536·4	60·4	617·4	61·5	W
	4	5		19·04	538·5	61·0	624·9	62·0	W
	5	0		17·40	537·4	61·4	631·8	62·3	W
	6	0		17·49	548·7	61·8	633·6	62·5	W
	7	0		17·89	541·5	61·9	636·0	62·6	W
	8	0		18·07	542·8	61·9	631·6	62·5	W
	9	0		17·39	545·2	61·8	626·9	62·0	W
	10	0		17·71	543·8	61·4	625·9	61·5	H
	11	0		16·03	540·2	61·0	624·9	61·0	B
	12	0		15·59	539·0	60·7	623·4	60·5	B
	13	0	25	14·70	536·3	60·2	625·4	60·0	B
	14	0		13·94	542·3	59·8	616·2	59·5	B
	15	0		14·13	531·3	59·3	619·9	59·0	B
	16	0		12·22	533·6	58·9	619·5	58·5	B
	17	0		13·56	533·5	58·5	626·3	58·0	B
	18	0		14·01	531·4	58·1	629·9	57·5	B
	19	0		14·15	530·3	57·7	632·3	57·0	W
	20	0		13·84	527·7	57·3	637·3	56·7	H
	21	0		14·11	525·0	57·0	636·5	56·5	H
	22	0		15·59	522·5	56·8	634·6	56·5	H
	23	0		18·07	519·4	56·7	633·6	56·5	H
21	0	0		21·46	522·2	56·6	625·3	56·5	H
	1	0		22·80	525·0	56·6	615·0	56·7	H
	2	0		23·43	530·6	56·7	616·3	56·8	H
	3	0		23·48	535·5	56·9	623·5	57·1	H
	4	0		21·88	537·4	57·1	627·6	57·5	H

DECLINATION. Magnet untouched, Aug. 5^d—Oct. 6^d.

BIFILAR. Observed 2^m after the Declination, $k=0{\cdot}000140$. BALANCE. Observed 3^m after the Declination, $k=0{\cdot}0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar.		Balance.		Observer's Initial.
		Corrected.	Thermometer.	Corrected.	Thermometer.	
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
21 5 0	25 19·73	540·1	57·4	631·9	58·0	H
6 0	18·35	542·7	57·8	634·7	58·1	B
7 0	16·55	541·8	57·9	639·9	58·2	B
8 0	17·40	544·5	57·9	632·9	58·1	B
9 0	17·44	546·9	57·9	629·4	58·0	B
10 0	17·46	543·4	57·8	629·1	57·9	B
11 0	17·34	543·6	57·6	625·5	57·6	B
12 0	16·79	543·8	57·3	624·8	57·6	D
13 0	25 16·35	543·2	57·3	622·6	57·4	D
14 0	15·14	538·8	57·2	623·8	57·2	D
15 0	17·67	542·7	57·0	607·9	57·0	D
16 0	11·48	532·2	56·8	606·3	56·8	D
17 0	11·27	536·3	56·6	608·6	56·6	D
18 0	11·96	533·5	56·4	618·9	56·5	D
19 0	12·04	532·0	56·3	623·6	56·3	B
20 0	12·15	530·2	56·2	627·6	56·1	B
21 0	12·90	525·0	56·0	628·5	56·0	H
22 0	15·41	523·3	55·8	621·0	56·0	H
23 0	19·49	515·6	55·8	627·0	56·0	H
22 0 0	22·75	525·2	55·8	622·4	56·2	H
1 0	23·45	533·9	56·0	621·4	56·5	H
2 0	25·47	545·0	56·2	619·4	56·6	B
3 0	26·60	540·0	56·4	642·9	56·9	B
4 0†	25·16	527·4	56·7	690·9	57·1	B
5 0†	21·44	533·4	56·9	734·2	57·3	B
6 0†	22·57	552·8	57·0	749·7	57·5	B
7 0†	18·10	531·9	57·1	762·1	57·5	B
8 0	14·82	545·5	57·0	708·1	57·5	H
9 0	14·10	536·0	57·0	681·0	57·4	B
10 0†	09·03	535·2	56·9	625·1	57·2	B
11 0†	19·39	539·1	56·9	611·9	57·2	H
12 0†	12·13	523·7	56·8	602·1	57·1	H
13 0†	25 18·55	533·6	56·8	552·5	57·0	H
14 0†	24·73	522·7	56·7	548·8	57·0	H
15 0†	20·72	525·0	56·5	534·0	56·8	H
16 0	18·84	531·0	56·4	586·4	56·7	H
17 0	13·63	532·3	56·2	618·8	56·2	H
18 0	13·69	531·0	56·0	632·1	56·2	H
19 0	13·83	531·5	55·9	637·7	55·9	B
20 0†	19·44	521·7	55·8	643·9	55·7	B
21 0†	19·44	509·2	55·7	645·9	55·7	B
22 0†	22·62	516·9	55·7	639·2	55·7	B
23 0	22·58	512·7	55·6	636·7	55·9	B
23 0 0	23·83	524·9	55·9	646·4	56·4	B
1 0†	28·42	519·5	56·3	651·7	56·9	B
2 0†	23·21	528·1	56·9	679·5	57·8	B
3 0†	25·47	575·4	57·7	678·7	58·7	B
4 0†	13·00	556·1	58·5	746·8	59·7	H
5 0†	22·94	555·4	59·4	734·2	60·5	B
6 0†	14·03	546·7	60·0	770·6	61·0	H
7 0	18·41	532·8	60·2	715·5	61·0	H
8 0	17·74	534·9	60·3	694·1	61·0	H
9 0	16·90	538·0	60·2	674·3	60·8	H
10 0	20·76	542·6	60·0	634·8	60·5	H
11 0	16·86	532·3	59·9	638·6	60·3	B
12 0	17·31	532·7	59·7	640·5	60·0	B

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar.		Balance.		Observer's Initial.
		Corrected.	Thermometer.	Corrected.	Thermometer.	
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
23 13 0	25 18·82	538·9	59·3	620·2	59·5	B
14 0†	24·08	532·2	58·9	602·8	59·0	B
15 0	16·89	522·6	58·7	584·6	58·8	B
16 0†	12·11	528·6	58·5	559·7	58·5	B
17 0	13·10	516·4	58·1	601·2	58·1	B
18 0	15·58	524·6	57·9	596·7	57·6	B
19 45	18·25	519·0	57·2	613·1	57·0	H
20 0	16·16	521·3	57·1	615·1	57·0	H
21 0	21·01	514·8	57·0	624·3	56·7	H
22 0	21·79	519·5	56·9	620·1	56·8	H
23 0	20·02	521·1	56·9	635·8	57·2	H
24 0 0	22·06	528·1	57·2	637·9	58·0	H
1 0	22·15	532·8	57·8	628·2	59·0	H
2 0	22·47	536·6	58·8	634·5	60·0	H
3 0	20·79	532·0	59·8	646·3	61·0	H
4 0	18·90	525·1	60·7	652·8	62·0	H
5 0	18·16	529·0	61·4	640·3	62·4	H
6 0†	16·65	542·2	62·0	641·2	62·9	B
7 0	13·49	541·4	62·2	670·2	63·1	H
8 0	12·20	535·4	62·4	684·5	62·9	H
9 0†	14·89	535·8	62·2	662·9	62·5	H
10 0†	09·64	515·9	61·9	619·3	62·3	H
11 0†	12·89	529·1	61·6	605·7	62·0	H
12 0	20·67	529·3	61·2	610·0	61·5	H
25 13 0	25 12·29	534·9	58·6	606·0	58·4	D
14 0	14·92	532·5	58·3	611·5	58·3	D
15 0	14·23	530·3	58·0	611·3	58·0	D
16 0	13·43	529·5	57·7	622·3	57·6	D
17 0	13·46	526·4	57·4	621·3	57·3	D
18 0	15·69	527·2	57·2	611·2	57·0	D
19 0	16·13	535·7	57·0	598·9	56·7	H
20 0	15·49	528·7	56·8	617·2	56·5	H
21 0	17·36	521·3	56·6	628·7	56·4	B
22 0	19·58	517·4	56·4	634·8	56·5	H
23 0	21·32	518·5	56·4	635·8	56·5	H
26 0 0	23·78	525·6	56·5	633·7	56·8	H
1 0	24·75	528·9	56·9	641·6	57·4	H
2 0	23·38	538·5	57·4	645·1	58·2	H
3 0	22·22	532·0	58·1	648·8	59·2	H
4 0	18·28	536·3	59·0	654·3	60·1	H
5 0	16·30	533·9	59·8	647·5	61·0	H
6 0	15·67	536·7	60·6	644·0	61·4	B
7 0	14·85	538·2	60·9	638·8	61·5	H
8 0	16·41	538·7	61·1	634·0	61·5	H
9 0	17·27	536·5	61·0	630·6	61·3	H
10 0	16·41	537·5	60·8	628·9	60·8	H
11 0	16·08	540·0	60·2	624·9	60·3	H
12 0	12·69	535·5	59·9	617·2	59·7	B
13 0	25 14·94	528·5	59·4	611·2	59·0	B
14 0†	16·46	526·3	58·9	618·5	58·4	B
15 0	18·84	530·1	58·4	608·8	57·8	B
16 0	14·26	529·2	57·9	626·1	57·1	B
17 0	14·03	529·4	57·3	631·9	56·4	B
18 0	13·20	526·2	56·7	635·9	55·6	B
19 0	12·48	524·4	56·0	632·5	55·0	H
20 0	12·93	519·0	55·4	633·9	54·5	H

DECLINATION. Magnet untouched, Aug. 5ᵈ—Oct. 6ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
26	21	0	25 16·45	515·6	55·0	635·2	54·1	H
	22	0	19·08	515·8	54·6	630·9	54·0	H
	23	0	21·61	518·4	54·3	630·4	54·2	H
27	0	0	24·22	521·6	54·4	632·4	54·7	H
	1	0	24·53	525·4	55·0	635·0	55·5	H
	2	0	22·58	531·2	55·8	634·0	56·5	H
	3	0	19·04	532·8	56·7	642·3	58·0	H
	4	0	17·24	533·5	57·7	645·1	59·0	H
	5	0	16·06	535·3	58·7	639·2	60·0	H
	6	0	16·41	535·5	59·8	631·3	60·6	B
	7	0	17·12	536·8	60·4	630·9	60·9	B
	8	0	17·02	536·9	60·7	629·8	60·9	B
	9	0	14·13	539·7	60·7	628·5	60·7	B
	10	0	15·47	540·6	60·5	624·7	60·5	B
	11	0	16·68	534·8	60·0	624·4	60·0	H
	12	0	16·77	535·1	59·8	625·6	59·5	H
	13	0	25 17·31	536·2	59·2	622·1	59·0	H
	14	0	17·40	534·6	58·8	622·7	58·5	H
	15	0	17·33	531·3	58·2	627·4	58·0	H
	16	0	19·89	528·5	57·9	627·7	57·5	H
	17	0	15·65	531·0	57·5	629·2	57·0	H
	18	0	15·02	533·7	57·0	633·6	56·4	H
	19	0	13·43	529·7	56·7	639·9	55·9	B
	20	0	13·99	522·2	56·2	643·9	55·5	B
	21	0	16·03	515·1	55·9	644·8	55·5	B
	22	0	18·95	512·5	55·8	633·0	55·5	B
	23	0	22·01	512·5	55·8	620·4	55·9	B
28	0	0	24·87	521·0	56·1	607·8	56·7	B
	1	0	25·90	527·5	56·9	601·9	57·8	B
	2	0	24·48	533·6	57·8	610·4	58·9	B
	3	0	21·56	534·3	58·9	625·3	60·3	B
	4	0	18·28	538·1	60·2	627·8	61·6	B
	5	0	15·76	534·8	61·6	630·1	62·9	B
	6	0	15·41	537·1	62·8	633·3	64·0	H
	7	0	16·45	539·5	63·7	627·9	64·6	H
	8	0	16·55	539·6	64·2	624·5	64·6	H
	9	0	16·82	539·5	64·2	624·9	64·5	H
	10	0	16·82	538·0	64·0	625·8	64·5	H
	11	0	16·70	538·0	63·8	622·4	63·7	D
	12	0	16·41	535·3	63·3	623·8	63·3	D
	13	0	25 16·60	535·0	62·7	624·0	62·6	D
	14	0	16·21	534·1	62·2	624·3	61·8	D
	15	0	16·43	534·3	61·7	628·9	61·1	D
	16	0	15·54	532·1	61·1	635·7	60·7	D
	17	0	14·98	531·0	60·3	632·9	59·6	D
	18	0	14·10	528·9	59·8	635·9	58·8	D
	19	0	13·69	526·6	59·0	636·6	58·2	H
	20	0	13·44	521·5	58·4	635·1	57·5	H
	21	0	16·01	517·0	58·0	636·4	57·0	B
	22	0	17·53	516·5	57·5	633·3	56·9	H
	23	0	20·97	517·7	57·3	618·0	57·1	H
29	0	0	24·15	524·8	57·4	604·7	58·0	H
	1	0	24·96	532·0	58·1	609·7	59·0	H
	2	0	24·84	536·9	59·1	620·6	60·5	H
	3	0	22·25	538·6	60·4	629·2	62·0	H
	4	0	18·84	539·0	62·0	629·9	63·5	H

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
29	5	0	25 16·57	535·0	63·2	629·3	64·5	H
	6	0	16·12	546·5	64·2	635·5	65·4	B
	7	0	16·75	549·5	65·0	645·5	66·0	H
	8	0	16·82	547·6	65·0	652·1	65·5	H
	9	0	17·93	538·6	65·0	680·9	65·5	H
	10	0†	17·06	528·8	65·0	692·6	65·5	H
	11	0†	08·38	538·5	64·8	597·4	65·2	H
	12	0†	13·46	535·7	64·7	522·2	65·0	B
	13	0†	25 08·05	528·8	64·2	528·8	64·5	B
	14	0†	13·67	520·5	63·8	539·9	64·0	B
	15	0†	06·19	529·7	63·3	446·9	63·3	B
	16	0†	18·13	516·9	62·8	518·5	62·5	B
	17	0†	12·16	532·3	62·2	564·1	61·9	B
	18	0	09·86	533·6	61·7	606·5	61·0	B
	19	0	11·59	532·2	60·9	602·9	60·2	H
	20	0†	12·29	510·2	60·3	621·2	59·5	H
	21	0	17·93	508·5	59·8	624·7	59·0	H
	22	0	16·90	510·1	59·3	629·8	58·7	H
	23	0	21·04	510·2	59·2	617·2	58·0	H
30	0	0	25·36	516·8	59·3	627·7	59·6	H
	1	0	28·94	512·3	59·8	635·8	60·5	H
	2	0	28·02	526·5	60·8	652·7	62·0	H
	3	0†	25·73	531·9	62·0	664·3	63·3	H
	4	0†	21·51	554·1	63·2	662·2	64·6	H
	5	0†	18·87	533·8	64·5	688·8	66·0	H
	6	0	16·30	546·9	65·7	702·6	66·9	B
	7	0†	13·49	539·5	66·4	721·0	67·1	B
	8	0	15·39	542·5	66·8	676·8	67·2	H
	9	0	17·04	535·6	66·9	669·0	67·5	B
	10	0	17·24	537·1	67·0	649·4	67·4	B
	11	0	14·06	534·5	66·9	638·3	67·4	B
	12	0	10·30	527·8	66·7	616·9	67·2	B
	13	0	25 21·12	524·9	66·4	572·8	67·0	D
	14	0	11·68	524·4	66·1	493·3	66·7	D
	15	0	10·45	527·5	65·8	570·1	66·3	D
	16	0	11·27	531·6	65·6	601·5	65·8	D
	17	0	12·62	530·5	65·2	603·2	65·4	D
	18	0	24·57	512·1	64·8	603·6	65·0	H
	19	0	15·76	525·2	64·4	593·3	64·5	H
	20	0	14·43	523·4	64·0	618·7	64·0	H
	21	0	14·53	518·1	63·7	630·2	63·5	H
	22	0	17·76	507·6	63·3	620·4	63·2	H
	23	0	20·25	512·1	63·3	629·6	63·5	B
31	0	0	23·65	517·9	63·7	635·0	64·3	B
	1	0	26·01	528·0	64·1	637·9	65·2	D
	2	0	26·14	527·5	64·9	653·9	66·0	D
	3	0	24·75	526·2	65·9	649·9	67·1	C
	4	0	19·73	544·4	66·8	658·1	68·1	W
	5	0	16·90	524·9	67·8	663·2	69·0	C
	6	0	17·37	535·8	68·7	660·0	69·7	C
	7	0	16·79	537·0	69·2	654·7	70·2	C
	8	0	10·75	534·2	69·7	665·6	70·5	W
	9	0	15·91	532·7	69·9	657·2	71·0	W
	10	0	15·61	531·9	69·9	637·4	70·5	W
	11	0	12·98	527·9	69·7	627·0	70·0	B
	12	0	13·59	527·0	69·1	613·4	69·2	B

DECLINATION. Magnet untouched, Aug. 5d—Oct. 6d.

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
1	13	0	25	15·81	525·6	67·9	608·5	67·4	H
	14	0		16·65	528·5	67·3	624·8	66·7	H
	15	0		16·87	538·2	66·8	627·5	66·0	H
	16	0		17·49	537·8	66·0	636·2	65·2	H
	17	0		15·58	526·7	65·3	638·2	64·3	H
	18	0		18·07	530·3	64·7	637·6	63·5	H
	19	0		14·10	527·9	63·9	632·8	62·5	W
	20	0		15·12	523·0	63·3	633·9	62·0	W
	21	3		14·98	513·7	62·8	647·0	61·4	B
	22	0		17·40	513·8	62·3	654·2	61·4	W
	23	0		19·44	514·4	62·3	649·6	62·0	W
2	0	0		23·78	517·4	62·5	636·2	62·8	W
	1	0		25·24	508·7	63·2	640·6	64·0	B
	2	0		25·67	522·2	64·3	643·3	65·5	W
	3	0		24·05	525·8	65·7	646·8	67·0	W
	4	0		20·60	533·1	67·0	645·7	68·3	W
	5	0		19·44	538·3	68·5	652·6	69·5	W
	6	0		16·82	534·3	69·4	650·8	70·4	H
	7	0		16·36	536·9	70·1	646·5	71·0	H
	8	0		16·89	537·5	70·3	642·9	70·7	H
	9	0		14·70	535·9	70·2	637·1	70·5	H
	10	0		16·03	535·1	70·0	632·9	70·3	H
	11	0		16·82	534·3	69·8	629·0	69·8	B
	12	0		16·45	534·5	69·2	630·6	69·1	B
	13	0	25	14·78	533·0	68·7	622·1	68·3	B
	14	0		17·44	534·5	68·0	604·5	67·5	B
	15	0		12·63	525·5	67·4	618·6	66·7	B
	16	0		16·66	520·3	66·7	630·7	65·9	B
	17	0		15·22	527·8	66·0	631·0	65·0	B
	18	0		13·25	528·5	65·3	638·8	64·1	B
	19	0		13·12	527·6	64·5	634·3	63·4	H
	20	0		14·23	523·9	63·9	638·7	62·7	H
	21	0		15·42	519·3	63·4	640·9	62·3	W
	22	0		18·30	514·1	63·0	640·9	62·1	H
	23	0		22·78	511·6	62·8	636·1	62·0	H
3	0	0		23·18	519·8	62·7	626·6	62·5	H
	1	0		24·72	521·5	62·8	623·8	63·0	H
	2	0		23·93	531·0	63·2	627·0	63·6	H
	3	0		20·89	535·0	63·8	638·4	64·5	H
	4	0		18·23	535·3	64·5	647·7	65·2	H
	5	0		16·82	536·3	65·1	646·0	65·7	H
	6	0		16·28	536·5	65·7	635·9	66·0	B
	7	0		16·01	536·5	65·9	628·7	65·9	H
	8	0		16·86	538·2	66·0	629·9	65·7	H
	9	0		16·39	537·9	65·8	628·6	65·5	H
	10	0		16·52	537·7	65·3	628·1	65·0	H
	11	0		16·53	538·2	65·0	627·9	64·5	W
	12	0		15·67	534·4	64·7	630·8	64·0	W
	13	0	25	15·41	535·1	64·1	629·3	63·5	W
	14	0		15·51	533·8	63·8	632·6	63·0	W
	15	0		15·41	533·9	63·4	634·1	62·6	W
	16	0		15·64	533·7	63·0	636·9	62·3	W
	17	0		15·51	529·1	62·7	640·4	62·0	W
	18	0		17·36	533·8	62·4	630·1	61·6	W
	19	0		13·56	528·9	62·1	634·3	61·4	H
	20	0		12·93	527·4	61·9	638·6	61·2	H

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
3	21	0	25	14·77	526·4	61·8	638·3	61·0	B
	22	0		18·72	514·3	61·5	639·9	61·0	H
	23	0		21·21	511·4	61·5	642·4	61·5	H
4	0	6		24·35	526·3	61·9	625·5	62·2	H
	1	0		22·18	535·8	62·3	625·1	63·0	H
	2	0		22·51	537·5	63·0	632·0	63·7	H
	3	0		21·84	540·8	63·8	643·6	64·7	H
	4	0		21·48	526·2	64·6	653·4	65·5	H
	5	0		20·18	533·0	65·3	661·1	66·0	H
	6	0		18·03	535·3	65·9	654·5	66·3	W
	7	0		17·10	533·3	66·2	656·1	66·4	W
	8	0		15·98	536·8	66·3	652·7	66·3	W
	9	0		15·59	538·9	66·0	644·6	66·0	W
	10	0†		13·96	540·6	65·9	573·6	65·5	W
	11	0†		13·56	532·7	65·6	608·2	65·3	B
	12	0		16·86	533·3	65·2	620·1	65·0	B
	13	0	25	16·21	533·6	64·9	623·3	64·5	B
	14	0		16·65	533·7	64·7	626·8	64·2	B
	15	0		16·13	533·9	64·3	625·3	63·8	B
	16	0		17·51	533·2	63·9	613·7	63·5	B
	17	0		14·11	531·9	63·7	604·3	63·0	B
	18	0		13·54	530·2	63·4	617·9	62·7	B
	19	0		14·03	528·6	63·0	631·2	62·4	W
	20	0		15·44	526·4	62·8	636·4	62·1	W
	21	0		15·83	519·5	62·5	638·2	62·0	H
	22	0		18·84	524·0	62·5	636·6	62·2	W
	23	0		21·43	521·6	62·6	632·9	62·5	W
5	0	0		23·52	521·0	62·8	626·7	63·0	W
	1	0		23·70	524·0	63·2	623·5	63·6	H
	2	0		22·57	529·1	63·8	627·8	64·4	W
	3	0		21·46	534·2	64·5	636·7	65·2	W
	4	0		18·88	532·5	65·2	642·2	65·9	W
	5	0		17·53	532·8	65·9	637·4	66·5	W
	6	0		16·57	530·8	66·2	638·9	66·5	W
	7	0		15·92	536·9	66·2	636·7	66·2	B
	8	0		16·05	538·1	66·0	634·3	65·9	B
	9	0		16·48	537·7	65·7	633·1	65·5	B
	10	0		17·27	536·8	65·4	628·0	65·1	B
	11	0		16·93	535·1	65·0	627·0	64·7	H
	12	0		16·36	535·2	64·7	628·4	64·5	H
	13	0	25	15·79	535·8	64·2	623·3	64·0	H
	14	0		16·48	533·0	64·0	622·9	63·7	H
	15	0		15·51	531·0	63·7	628·2	63·5	H
	16	0		15·34	531·1	63·4	632·8	63·2	H
	17	0		15·47	530·9	63·1	634·8	63·0	H
	18	0		15·44	530·0	62·9	640·3	62·6	H
	19	0		14·73	528·1	62·8	644·4	62·4	B
	20	0		14·43	524·5	62·6	646·6	62·0	B
	21	0		14·71	519·8	62·3	647·4	61·9	W
	22	0		15·34	515·8	62·1	643·1	61·8	B
	23	0		18·11	518·0	62·1	635·6	61·9	B
6	0	0		20·50	520·7	62·0	628·5	62·2	W
	1	0		21·46	524·5	62·1	626·7	62·3	W
	2	0		21·17	526·2	62·3	632·2	62·4	B
	3	0		20·09	532·5	62·4	637·3	62·5	B
	4	0		18·21	535·6	62·5	636·6	62·7	W

DECLINATION. Magnet untouched, Aug. 5^d—Oct. 6^d.

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0·0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs. d.	h.	m.	DECLINATION. ° ′	BIFILAR. Corrected. Sc. Div.	BIFILAR. Thermometer. °	BALANCE. Corrected. Mic. Div.	BALANCE. Thermometer. °	Observer's Initial.
6	5	0	25 16·66	536·8	62·7	637·7	62·8	B
	6	0	15·83	540·2	62·7	645·6	63·0	H
	7	3	16·12	536·7	62·8	652·1	63·0	H
	8	0	13·90	529·1	62·9	659·8	63·1	H
	9	0	16·01	534·1	62·9	656·1	63·2	H
	10	0	16·75	537·4	62·9	644·3	63·2	H
	11	0	16·89	537·9	62·9	640·4	63·0	W
	12	0	16·75	538·3	62·8	636·6	62·9	W
	13	0	25 16·82	538·5	62·7	633·7	62·7	W
	14	0	16·18	537·9	62·5	632·5	62·6	W
	15	0	16·15	537·2	62·3	633·8	62·5	W
	16	0	15·38	535·9	62·1	633·4	62·3	W
	17	0	15·38	536·3	62·0	638·3	62·0	W
	18	0	15·81	535·0	61·9	628·6	61·9	W
	19	0	13·32	537·8	61·8	633·0	61·6	H
	20	0	13·34	534·3	61·6	637·1	61·5	H
	21	0	14·43	531·6	61·5	631·2	61·4	B
	22	0	16·57	524·2	61·4	627·8	61·5	H
	23	0	19·46	519·1	61·5	626·8	62·0	H
7	0	0	22·87	523·5	62·0	610·6	62·6	B
	1	0	23·59	529·9	62·5	602·2	63·2	H
	2	0	22·25	534·8	63·1	614·5	64·0	H
	3	0	21·61	524·6	63·7	630·4	64·6	H
	4	0	19·34	539·0	64·2	626·4	65·1	W
	5	0	19·79	549·3	64·8	628·2	65·5	H
	6	0	18·84	536·1	65·0	636·7	65·8	W
	7	0	18·52	541·4	65·2	635·8	65·9	W
	8	0	18·55	542·0	65·4	634·1	65·9	W
	9	0	16·13	545·9	65·3	639·0	66·7	W
	10	0	16·55	542·3	65·3	636·0	66·3	W
	11	0	15·52	542·7	65·1	622·4	65·7	B
	12	0	12·38	533·5	64·9	585·4	65·2	B
8	13	0	....	......	......	......	......	
	14	0	....	......	......	......	......	
	15	0	....	......	......	......	......	
	16	6	25 13·81	534·0	57·5	631·4	57·0	B
	17	0	13·02	528·3	57·3	637·7	56·9	B
	18	0	13·59	528·5	57·1	641·5	56·7	B
	19	0	15·94	522·7	57·0	644·3	56·6	H
	20	0	17·49	525·7	56·8	640·8	56·5	H
	21	0	15·92	527·5	56·8	640·0	56·5	W
	22	0	16·16	525·8	56·7	644·5	56·6	H
	23	0	20·18	522·5	56·8	645·0	57·0	H
9	0	0	21·53	523·4	57·1	646·9	57·5	H
	1	0	23·21	528·0	57·6	644·1	58·4	H
	2	0	23·38	533·8	58·2	646·1	59·5	H
	3	0	21·23	533·5	59·1	647·7	60·2	H
	4	0	17·89	532·7	60·0	646·8	61·0	H
	5	0	16·60	535·4	60·8	647·7	62·0	H
	6	0	15·49	546·0	61·7	641·9	62·4	B
	7	0	08·52	538·1	62·1	662·2	62·7	B
	8	0	14·87	536·7	62·2	647·8	62·5	B
	9	0	16·08	527·4	62·1	639·4	62·3	B
	10	0	16·86	544·0	62·0	631·8	62·0	B
	11	0	14·13	536·4	61·7	631·0	61·6	W
	12	0†	15·11	530·4	61·2	628·4	61·3	W

Göttingen Mean Time of Declination Obs. d.	h.	m.	DECLINATION. ° ′	BIFILAR. Corrected. Sc. Div.	BIFILAR. Thermometer. °	BALANCE. Corrected. Mic. Div.	BALANCE. Thermometer. °	Observer's Initial.
9	13	0†	25 20·79	532·1	61·0	575·5	61·0	W
	14	0†	15·67	535·9	60·8	581·7	60·9	W
	15	0	14·96	527·0	60·6	599·5	60·5	W
	16	0	14·91	529·4	60·2	612·5	60·2	W
	17	20	13·25	531·5	59·9	624·3	59·5	W
	18	0	12·63	530·3	59·7	628·4	59·2	W
	19	0	14·51	528·0	59·1	631·1	58·6	B
	20	0	14·62	523·9	58·8	634·6	58·1	B
	21	0	15·52	525·0	58·2	637·8	57·6	H
	22	0	16·70	523·7	58·0	637·4	57·6	H
	23	0	18·20	523·6	57·9	633·9	57·6	H
10	0	0	21·43	529·6	57·9	628·7	58·2	H
	1	0	22·17	531·3	58·0	624·6	58·5	H
	2	0	21·12	534·7	58·5	625·8	59·0	B
	3	0	19·29	535·3	58·9	630·3	59·4	B
	4	0	17·36	533·7	59·2	630·9	59·8	B
	5	0	15·51	533·1	59·6	629·9	60·2	H
	6	0	15·83	537·2	59·9	624·9	60·4	W
	7	0	16·68	539·8	60·0	623·1	60·4	W
	8	0	16·75	541·7	60·0	622·9	60·4	W
	9	0	17·33	538·4	59·9	627·3	60·1	W
	10	0	17·17	536·0	59·8	629·7	59·9	W
	11	0	16·80	536·3	59·3	628·7	59·5	H
	12	0	16·35	535·7	59·0	627·7	58·7	H
	13	0	25 15·99	537·1	58·6	629·5	58·2	H
	14	0	16·87	534·2	58·0	625·7	57·5	H
	15	0	14·35	532·4	57·5	626·4	57·0	H
	16	0	14·03	532·3	57·0	629·7	56·4	H
	17	0	14·28	530·9	56·4	632·1	55·7	H
	18	0	14·20	530·3	56·0	637·5	55·2	H
	19	0	13·44	529·3	55·4	644·1	54·5	W
	20	0	12·75	525·6	54·9	649·7	54·0	W
	21	0	13·67	522·3	54·6	650·9	53·9	B
	22	0	16·39	519·2	54·3	648·1	54·0	W
	23	0	19·51	521·3	54·3	642·6	54·4	W
11	0	0	21·77	527·8	54·7	627·2	55·4	W
	1	0	23·39	537·5	55·6	619·4	56·5	W
	2	0	22·40	538·2	56·4	626·3	57·5	W
	3	0	19·37	542·0	57·2	630·6	58·4	W
	4	3	16·75	539·0	58·0	636·0	59·0	W
	5	0	15·81	540·7	58·8	636·9	59·7	W
	6	0	15·52	540·3	59·2	628·9	60·0	W
	7	0	17·39	543·7	59·6	621·1	60·2	W
	8	0	18·16	542·7	59·7	622·5	60·3	W
	9	0	14·78	541·4	59·8	623·7	60·2	H
	10	0	17·42	536·9	59·6	625·2	60·0	H
	11	0	16·89	538·2	59·4	628·2	59·7	B
	12	0	16·62	538·2	59·1	627·5	59·4	B
	13	0	25 16·48	538·8	58·9	625·0	59·0	B
	14	0	16·18	538·2	58·7	626·2	58·7	B
	15	0	15·47	538·4	58·4	627·4	58·5	B
	16	0	14·98	536·2	58·0	627·9	58·1	B
	17	0	13·77	537·6	57·8	626·1	57·7	B
	18	0	13·43	535·5	57·5	628·4	57·2	B
	19	0	12·85	530·7	57·0	633·0	56·7	H
	20	0	13·02	524·6	56·7	638·3	56·3	H

DECLINATION. Magnet untouched, Aug. 5ᵈ—Oct. 6ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, $k=0·000140$. BALANCE. Observed 3ᵐ after the Declination, $k=0·0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
11	21	0	25	14·53	519·0	56·4	638·5	56·1	W
	22	0		16·53	516·3	56·1	637·2	56·1	H
	23	0		20·05	517·2	56·1	632·1	56·2	H
12	0	0		22·15	524·7	56·2	627·1	56·7	H
	1	0		23·75	532·8	56·6	621·8	57·5	H
	2	0		23·07	537·3	57·2	624·9	58·2	H
	3	0		20·49	536·4	57·9	628·7	59·0	H
	4	0		18·50	539·5	58·7	627·2	59·7	H
	5	0		17·07	536·0	59·4	634·6	60·5	H
	6	0		16·38	532·4	60·1	635·1	60·9	B
	7	0		17·49	536·5	60·7	631·5	61·0	B
	8	0		16·92	538·1	60·8	632·7	61·0	B
	9	0		12·25	538·5	60·6	635·0	60·6	B
	10	0		13·88	539·2	60·2	614·1	60·2	B
	11	0		13·41	536·6	59·9	612·4	59·7	W
	12	0		15·59	538·9	59·4	612·4	59·0	W
	13	0	25	16·05	536·1	58·9	619·5	58·4	W
	14	0		15·61	535·4	58·3	623·2	57·8	W
	15	0		14·13	535·8	57·8	625·6	57·0	W
	16	0		13·12	533·5	57·2	629·9	56·5	W
	17	0		13·64	534·3	56·7	629·0	55·8	W
	18	0		13·46	535·5	56·0	629·3	55·3	W
	19	0		12·69	533·0	55·6	631·1	54·7	B
	20	0		12·25	527·3	55·0	636·8	54·2	B
	21	0		13·57	521·1	54·7	640·0	54·0	H
	22	0		16·52	516·8	54·4	638·5	54·0	H
	23	0		19·68	518·9	54·3	625·9	54·0	B
13	0	0		22·84	525·9	54·2	622·9	54·5	H
	1	0		25·17	529·7	54·7	629·2	55·2	H
	2	0		24·87	532·7	55·3	634·4	56·0	B
	3	0		22·80	535·9	56·0	636·5	56·8	B
	4	0		19·42	537·0	56·9	639·8	57·8	B
	5	0		17·56	539·6	57·7	636·1	58·5	B
	6	0		17·09	541·9	58·1	630·5	59·0	W
	7	0		17·67	542·5	58·5	621·2	59·0	W
	8	0		17·54	544·2	58·6	622·5	58·9	W
	9	0		13·54	542·0	58·4	633·3	58·7	W
	10	0		16·15	539·9	58·3	628·1	58·5	W
	11	0		14·01	539·0	58·0	623·2	58·3	H
	12	0		15·98	543·6	57·9	618·4	58·0	H
	13	0	25	16·01	542·6	57·7	619·7	57·7	H
	14	0		15·51	541·9	57·4	620·4	57·4	H
	15	0		16·32	540·4	57·2	621·0	57·2	H
	16	0		13·91	540·8	56·9	611·6	56·8	H
	17	0		11·61	540·4	56·7	609·6	56·5	H
	18	0		10·80	540·1	56·5	612·8	56·3	H
	19	0		11·91	536·9	56·2	618·5	56·0	W
	20	0		11·39	535·1	56·0	619·7	55·7	W
	21	0		13·39	525·5	55·7	620·8	55·4	W
	22	0		18·13	520·1	55·4	621·1	55·2	W
	23	0		22·17	515·9	55·1	623·3	55·0	W
14	0	0		24·87	517·5	55·0	633·2	54·9	W
	1	0		26·21	525·7	54·9	630·5	54·7	W
	2	0		24·82	529·4	54·9	631·8	54·7	W
	3	0		24·82	531·8	54·8	644·9	54·8	W
	4	0		21·63	536·0	54·8	648·2	54·8	W

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
14	5	0	25	18·88	529·3	54·8	662·3	54·9	W
	6	0		17·67	539·1	54·8	655·0	55·0	H
	7	0		11·91	537·5	54·8	673·0	55·1	H
	8	0		08·68	545·8	54·9	663·0	55·2	H
	9	0		17·33	542·8	55·0	641·8	55·5	H
	10	0		17·02	537·2	55·0	637·4	55·6	H
	11	0		16·80	536·7	55·2	634·2	55·7	W
	12	0		16·62	535·8	55·3	634·4	55·8	W
15	13	0	25	16·12	532·7	57·8	620·0	58·1	W
	14	0		15·61	535·0	57·7	620·3	58·1	W
	15	0		16·32	535·4	57·7	620·8	58·1	W
	16	0		16·01	534·1	57·7	615·8	58·0	W
	17	0		18·40	532·4	57·7	608·3	58·0	W
	18	0		19·39	532·0	57·6	613·4	58·0	W
	19	0		19·35	529·1	57·5	616·6	58·0	H
	20	0		16·93	530·7	57·3	611·7	57·6	H
	21	0		16·23	520·1	57·3	618·6	57·6	H
	22	0		19·37	520·6	57·3	613·9	57·6	H
	23	0		20·09	518·9	57·5	616·5	58·0	H
16	0	0		22·11	520·6	57·8	616·6	58·5	H
	1	0		24·15	526·2	58·3	613·5	59·3	H
	2	0		24·99	534·0	59·2	611·0	60·2	H
	3	0		23·66	534·2	60·0	620·9	61·0	H
	4	0		21·53	535·8	60·9	627·3	62·0	H
	5	0		18·63	536·5	61·7	628·7	62·7	W
	6	0		15·27	532·4	62·2	638·7	63·1	W
	7	0		17·02	537·9	62·6	631·6	63·1	W
	8	0		16·16	543·5	62·6	620·9	63·0	W
	9	0		16·65	540·4	62·4	616·2	62·8	W
	10	0		16·33	539·7	62·1	611·6	62·4	W
	11	0		15·94	537·0	61·8	611·9	62·0	H
	12	0†		14·17	541·3	61·5	601·9	61·5	H
	13	0†	25	14·75	540·1	61·0	572·0	61·0	H
	14	0†		06·97	528·2	60·7	548·9	60·7	H
	15	0		08·08	526·6	60·2	576·4	60·3	H
	16	0		12·08	533·1	60·0	591·4	59·8	H
	17	0		12·15	535·4	59·6	601·3	59·2	H
	18	0		13·52	533·7	59·0	609·8	58·7	H
	19	0		12·25	536·5	58·8	616·0	58·3	W
	20	0		12·72	527·4	58·3	620·5	57·9	W
	21	3		15·44	522·0	58·0	621·0	57·5	B
	22	0		15·59	517·9	57·7	620·9	57·1	W
	23	0		18·92	520·5	57·3	615·1	57·0	W
17	0	0		22·91	511·6	57·1	619·3	56·8	W
	1	0		23·27	522·4	57·0	614·7	56·5	W
	2	0		24·35	534·5	56·9	617·0	56·5	W
	3	0		22·91	528·2	56·7	629·4	56·4	W
	4	7		20·79	531·2	56·6	630·4	56·3	W
	5	0		18·57	534·8	56·5	634·1	56·2	W
	6	0		16·93	534·5	56·2	630·7	56·0	H
	7	0		16·53	537·0	56·0	630·2	56·0	H
	8	0		16·39	537·0	56·0	627·6	55·7	H
	9	0		16·45	538·1	55·8	626·8	55·6	H
	10	0		16·73	537·8	55·8	623·6	55·6	H
	11	0		16·12	535·6	55·7	625·7	55·5	B
	12	0		15·94	536·2	55·5	624·1	55·3	B

DECLINATION. Magnet untouched, Aug. 5ᵈ—Oct. 6ᵈ.
BIFILAR. Observed 2ᵐ after the Declination $k = 0{\cdot}000140$. BALANCE. Observed 3ᵐ after the Declination, $k = 0{\cdot}0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
17	13	0	25	15·42	535·1	55·2	622·9	55·0	B
	14	0		14·26	530·9	55·0	622·3	54·8	B
	15	0†		16·46	532·9	54·9	604·1	54·5	B
	16	0†		08·73	534·3	54·6	589·5	54·2	B
	17	0		11·79	532·0	54·2	601·1	54·0	B
	18	0		13·02	532·9	53·9	610·1	53·5	B
	19	0		13·46	530·3	53·5	625·5	53·0	H
	20	0		12·87	530·9	53·0	631·1	52·5	H
	21	0		15·74	520·5	52·9	640·5	52·3	W
	22	0		17·46	519·6	52·7	637·6	52·2	H
	23	0		20·99	518·5	52·5	632·8	52·3	H
18	0	0		23·45	521·4	52·5	629·8	52·5	H
	1	0		23·68	526·4	52·6	621·2	52·7	H
	2	0		22·84	530·1	52·7	626·0	53·0	H
	3	0		20·20	532·7	53·0	632·2	53·3	H
	4	0		18·13	532·3	53·1	641·2	53·5	H
	5	0		16·53	535·0	53·2	643·3	53·5	H
	6	0		16·08	535·8	53·3	645·2	53·5	B
	7	0		16·25	536·7	53·3	641·6	53·4	B
	8	0		16·45	538·1	53·1	631·3	53·1	B
	9	0		16·32	535·4	53·0	638·0	53·0	B
	10	0		12·55	545·8	52·9	632·0	52·9	B
	11	0		16·72	537·4	52·8	623·9	52·7	D
	12	0		16·06	535·2	52·7	623·7	52·9	D
	13	0	25	16·12	536·4	52·7	617·8	53·1	D
	14	0		16·97	538·4	52·7	617·1	53·3	D
	15	0		15·45	533·8	52·7	616·5	53·3	W
	16	0		14·30	531·6	52·7	621·3	53·2	W
	17	0		13·52	535·7	52·6	622·7	53·0	W
	18	0		15·61	534·8	52·6	627·9	53·0	W
	19	0		14·67	535·2	52·4	629·4	52·9	B
	20	0		14·67	530·9	52·3	634·5	52·6	B
	21	0		13·90	527·1	52·2	634·6	52·5	B
	22	0		15·86	523·5	52·1	636·7	52·4	B
	23	0		17·26	522·6	52·0	639·8	52·5	H
19	0	0		22·24	516·3	52·2	636·1	53·0	H
	1	0		24·75	517·5	52·5	631·6	53·5	H
	2	0		24·05	518·6	53·0	037·5	54·1	H
	3	0		21·54	530·6	53·6	644·5	54·7	H
	4	0		21·29	535·0	54·3	643·8	55·3	B
	5	0		18·92	537·1	55·0	640·0	55·9	B
	6	0		17·40	540·2	55·6	638·4	56·1	H
	7	0		16·82	541·1	55·7	634·8	56·2	H
	8	0		16·48	542·6	55·8	632·4	56·2	W
	9	0		05·03	543·8	55·8	644·1	56·3	W
	10	0		15·14	536·4	55·7	625·1	56·2	W
	11	0		16·03	540·9	55·4	614·7	55·7	H
	12	0		16·01	538·7	55·0	614·0	55·3	H
	13	0†	25	12·89	535·8	54·8	608·1	54·8	H
	14	0†		11·42	539·6	54·3	586·3	54·6	H
	15	0†		10·38	513·5	54·0	567·2	54·4	H
	16	0†		10·16	538·1	53·9	506·7	54·2	H
	17	0		08·26	535·3	53·7	555·8	54·0	H
	18	0		18·21	545·9	53·4	544·5	53·5	H
	19	0		14·73	546·0	53·0	545·5	52·9	W
	20	0		15·18	535·0	52·8	559·6	52·6	W
19	21	0	15	14·89	531·1	52·7	582·8	52·4	B
	22	0		14·41	523·2	52·4	592·3	52·4	W
	23	0†		21·53	502·7	52·4	609·5	52·5	W
20	0	0†		29·53	507·9	52·7	612·1	53·0	W
	1	0		23·24	516·7	53·0	609·8	53·7	W
	2	0		23·65	526·8	53·3	608·3	54·0	W
	3	0		23·75	542·8	53·8	619·4	54·5	W
	4	0		23·51	535·6	54·1	646·6	54·9	W
	5	0†		18·65	542·8	54·7	688·5	55·2	W
	6	0†		21·88	534·5	54·9	707·7	55·3	W
	7	0†		07·42	532·7	55·0	734·1	55·4	W
	8	0†		00·82	537·3	55·0	677·9	55·5	H
	9	0†		08·34	524·3	54·9	651·0	55·3	H
	10	0†		14·28	529·9	54·7	647·8	55·0	H
	11	0†		22·87	535·0	54·3	587·4	54·3	B
	12	0†		19·95	538·9	53·9	581·4	53·8	B
	13	0	25	14·96	530·0	53·5	596·5	53·0	B
	14	0		14·87	527·7	53·0	605·5	52·5	B
	15	0		18·30	525·5	52·5	607·2	51·6	B
	16	0		14·91	527·7	51·9	613·3	50·9	B
	17	0		14·67	529·0	51·3	618·3	50·3	B
	18	0		16·92	528·5	50·7	625·2	49·7	B
	19	0		17·22	514·7	50·1	630·1	49·2	H
	20	0		16·36	526·7	49·6	631·9	48·6	H
	21	0		17·87	517·8	49·1	638·4	48·3	W
	22	0		20·49	515·8	48·9	640·3	48·2	H
	23	0		19·14	513·2	48·7	640·5	48·2	H
21	0	0		20·79	524·1	48·7	650·9	48·7	H
	1	0		22·53	516·3	48·9	653·7	49·3	H
	2	0		21·71	535·5	49·4	658·6	50·0	H
	3	0		21·07	536·8	50·0	660·6	50·5	H
	4	0		19·98	528·4	50·5	665·9	51·1	H
	5	0		15·47	529·6	51·0	674·5	51·5	H
	6	0		14·75	523·2	51·3	686·7	51·8	B
	7	0		15·54	532·6	51·6	677·9	52·0	B
	8	0		15·27	534·3	51·6	659·0	52·0	B
	9	0		10·30	534·9	51·6	649·1	51·9	B
	10	0		11·96	536·5	51·5	643·2	51·6	B
	11	0		13·67	533·9	51·1	634·2	51·3	W
	12	0		14·33	533·3	50·8	626·5	50·7	W
22	13	0	25	15·05	530·6	51·0	619·4	50·7	H
	14	0		14·84	533·1	50·7	622·3	50·3	H
	15	0		15·44	534·2	50·2	623·9	49·8	H
	16	0		13·61	533·1	49·8	621·7	49·3	H
	17	0		14·98	534·7	49·3	621·7	48·7	H
	18	0		15·32	534·2	48·8	624·8	48·2	H
	19	0		16·18	533·7	48·3	623·3	47·6	W
	20	0†		19·55	510·7	47·9	632·3	47·1	W
	21	0		18·95	522·4	47·6	622·3	46·8	B
	22	0		18·60	523·9	47·2	622·8	46·5	W
	23	0		21·73	522·9	47·0	618·0	46·5	W
23	0	0		22·33	525·3	46·9	623·2	46·6	W
	1	0		24·66	523·4	46·9	635·8	46·8	W
	2	0		19·64	530·6	46·9	643·8	47·0	W
	3	0		21·41	535·5	47·0	650·0	47·4	W
	4	0		16·32	530·8	47·3	661·4	47·7	W

DECLINATION. Magnet untouched, Aug. 5d—Oct. 6d.

BIFILAR. Observed 2m after the Declination, $k = 0{\cdot}000140$. BALANCE. Observed 3m after the Declination $k = 0{\cdot}0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
23	5	0	25	17·54	532·3	47·7	662·7	48·0	W
	6	0		17·56	536·5	47·8	655·2	48·3	H
	7	0†		13·86	532·9	48·0	645·7	48·6	H
	8	0		12·70	542·6	48·2	642·1	48·9	W
	9	0		16·23	537·4	48·4	635·8	49·2	H
	10	0		16·87	538·0	48·7	633·4	49·5	H
	11	0		16·48	536·7	48·9	632·9	49·4	B
	12	0		16·18	536·4	48·9	633·3	49·4	B
	13	0	25	17·39	537·5	48·9	630·6	49·3	B
	14	9		14·80	540·6	48·9	622·1	49·3	B
	15	0		12·75	532·7	48·9	615·5	49·3	B
	16	0		10·77	537·5	48·9	606·4	49·3	B
	17	0		14·50	533·3	48·9	612·6	49·3	B
	18	0		17·51	542·5	48·9	602·6	49·3	B
	19	0		17·61	536·7	48·9	604·6	49·3	H
	20	0		16·06	530·8	48·9	613·1	49·2	H
	21	0		15·45	527·8	48·9	620·0	49·2	W
	22	0		16·30	526·7	48·9	623·1	49·5	H
	23	0		20·55	528·9	49·1	617·4	49·8	H
24	0	0		21·21	529·7	49·7	618·5	50·5	H
	1	0		22·03	532·6	50·3	620·5	51·5	H
	2	0		22·31	525·5	51·3	628·1	52·7	H
	3	0		16·45	527·5	52·4	652·7	54·0	H
	4	0		20·27	526·5	53·6	651·3	55·0	W
	5	0		18·14	537·0	54·7	638·4	56·0	W
	6	0		16·08	529·4	55·6	639·7	56·6	B
	7	0		15·65	537·7	56·0	627·4	56·9	B
	8	0†		10·72	537·3	56·2	623·1	57·0	B
	9	0		14·31	538·1	56·2	617·0	56·9	B
	10	0		15·54	538·6	56·0	614·1	56·5	B
	11	0		14·80	539·8	55·7	611·0	56·0	W
	12	0		16·80	538·4	55·0	596·9	55·3	W
	13	0	25	14·77	532·5	54·5	599·5	54·5	W
	14	0		13·90	531·6	53·9	608·7	53·7	W
	15	0†		17·94	524·3	53·3	611·9	52·8	W
	16	0		17·22	527·9	52·7	594·4	52·2	W
	17	0		14·50	534·9	52·1	590·0	51·5	W
	18	0		14·57	534·6	51·6	594·3	50·5	W
	19	0		14·78	532·5	50·9	598·3	49·8	B
	20	0		14·77	533·5	50·3	604·3	49·2	B
	21	0		14·17	530·4	49·8	614·4	49·0	H
	22	0		16·68	530·5	49·4	617·9	48·8	H
	23	0		19·76	518·8	49·3	621·8	49·0	B
25	0	0		25·65	519·7	49·5	622·6	49·6	B
	1	0		23·54	526·1	49·8	619·3	50·3	H
	2	0		24·55	527·9	50·7	626·5	51·3	B
	3	0		24·79	535·1	51·3	620·1	52·2	B
	4	0		23·46	535·8	52·0	624·8	52·8	B
	5	0		19·48	535·8	52·6	637·1	53·3	W
	6	0		20·23	536·8	53·0	652·0	53·8	W
	7	0		16·65	536·7	53·2	641·2	54·0	W
	8	0†		13·23	538·0	53·3	640·3	54·2	W
	9	0†		09·32	529·6	53·6	643·9	54·5	W
	10	0	25	10·03	525·2	53·8	639·4	54·6	W
	11	0†	24	59·06	533·9	53·8	583·3	54·5	H
	12	0†	25	00·53	517·8	53·8	506·6	54·7	H

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
25	13	0†	25	03·58	509·2	53·9	488·2	54·9	H
	14	0†		20·55	515·6	54·0	415·0	55·0	H
	15	0†		14·64	524·4	54·0	434·2	55·0	H
	16	0		18·16	524·8	54·0	445·1	55·0	H
	17	0†		08·01	542·2	54·0	468·6	54·8	H
	18	0†		09·49	540·5	54·0	512·7	54·8	H
	19	0†		16·15	538·6	54·0	538·6	54·9	W
	20	0†		14·17	515·6	54·0	558·6	54·9	W
	21	0†		18·47	533·0	54·1	577·3	54·9	B
	22	0†		20·08	514·7	54·1	588·5	55·0	W
	23	0		22·17	511·5	54·3	596·7	55·3	W
26	0	0†		26·63	510·6	54·8	597·1	55·7	W
	1	0†		23·65	534·4	55·1	609·5	56·1	W
	2	0		27·48	529·8	55·7	629·2	56·5	W
	3	0		25·26	534·5	56·0	630·6	56·9	W
	4	0†		14·64	527·8	56·5	766·0	57·3	W
	5	0†		18·50	564·1	56·8	785·3	57·5	W
	6	0†		19·88	550·2	57·0	800·8	57·8	H
	7	0†		01·34	544·2	57·1	756·7	58·0	H
	8	0†		00·20	506·5	57·3	719·1	58·3	H
	9	0†		02·48	521·5	57·5	618·5	58·5	H
	10	0		11·39	521·3	57·7	604·3	58·7	H
	11	0†		11·82	522·7	57·9	591·1	58·5	B
	12	0†		17·70	524·2	57·8	561·0	58·5	B
	13	0†	25	18·43	528·8	57·8	589·7	58·5	B
	14	0		18·41	526·2	57·7	617·0	58·3	B
	15	0		16·65	530·1	57·6	611·7	58·0	B
	16	0		17·10	528·2	57·3	611·9	57·6	B
	17	0		17·96	529·9	57·0	604·9	57·3	B
	18	0		20·05	533·9	56·9	594·1	57·0	B
	19	0†		27·53	519·1	56·7	586·4	56·7	H
	20	0		31·12	509·8	56·4	598·2	56·6	H
	21	0		21·43	523·4	56·4	601·1	56·6	W
	22	0		21·66	510·2	56·3	638·8	56·7	H
	23	0†		26·90	493·1	56·4	665·2	57·1	H
27	0	0		25·36	514·1	57·0	639·7	58·0	H
	1	0		26·54	518·1	57·6	640·7	58·7	H
	2	0		24·91	526·5	58·5	633·9	59·6	H
	3	0		20·20	520·4	59·3	646·3	60·6	H
	4	0†		19·44	538·7	60·2	673·4	61·5	H
	5	0		18·18	540·4	60·9	711·0	62·0	H
	6	0†		10·40	546·7	61·4	719·2	62·3	B
	7	0†		10·13	528·3	61·6	685·9	62·4	B
	8	0		13·34	529·8	61·7	667·0	62·5	B
	9	0		13·63	528·4	61·7	656·1	62·3	B
	10	0		15·51	534·3	61·6	633·8	62·1	B
	11	0		15·42	531·8	61·4	622·3	62·0	W
	12	0†		20·15	528·6	61·1	603·8	61·6	W
	13	0†	25	17·40	530·9	60·9	568·5	61·5	W
	14	0†		20·38	529·8	60·9	579·8	61·3	W
	15	0		17·74	530·6	60·8	537·6	61·2	W
	16	0†		16·89	530·1	60·7	532·6	61·1	W
	17	0†		22·47	517·0	60·6	532·1	61·0	W
	18	0		14·51	534·3	60·4	561·2	60·9	W
	19	0		14·13	531·3	60·3	592·1	60·5	B
	20	0		14·17	527·8	60·1	607·4	60·2	B

DECLINATION. Magnet untouched, Aug. 5d—Oct. 6d.

BIFILAR. Observed 2m after the Declination, $k=0·000140$. BALANCE. Observed 3m after the Declination, $k=0·0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
27	21	0	25	14·48	523·4	59·9	621·5	60·0	H
	22	0		14·82	519·2	59·8	625·7	59·9	H
	23	0		18·52	518·1	59·7	624·1	59·9	H
28	0	0		21·77	524·1	59·8	618·3	59·9	B
	1	0		21·26	520·1	59·7	624·0	60·0	H
	2	0		24·53	530·4	59·7	628·1	60·0	B
	3	0		23·51	526·8	59·8	634·4	60·0	W
	4	0		20·49	532·6	59·7	634·6	59·9	B
	5	0		15·74	531·2	59·7	667·4	59·8	B
	6	0†		06·95	532·7	59·6	688·7	59·6	W
	7	0		17·44	531·2	59·3	668·6	59·5	W
	8	0		17·81	533·9	59·0	645·3	59·0	W
	9	0		16·23	533·6	58·8	639·3	58·5	W
	10	0		15·72	532·7	58·4	636·8	58·0	W
	11	0		15·52	532·8	58·0	633·0	57·4	H
	12	0		14·99	533·1	57·5	629·9	57·0	H
29	13	0†	25	11·35	511·6	52·8	407·1	52·4	W
	14	0†		09·73	524·0	52·3	531·9	52·0	W
	15	0		20·70	523·3	51·9	554·5	51·5	W
	16	0		16·99	526·1	51·5	565·9	50·8	W
	17	0†		19·93	529·4	50·9	557·2	50·0	W
	18	0†		25·83	513·6	50·4	563·2	49·7	W
	19	0†		23·86	528·1	49·9	565·3	49·2	H
	20	0†		19·64	527·0	49·4	602·6	49·0	H
	21	0		18·43	522·2	49·2	614·5	48·6	B
	22	0		21·29	519·3	48·8	631·6	48·5	H
	23	0		20·30	517·8	48·8	632·5	48·6	H
30	0	0		21·56	522·2	48·8	637·0	49·0	H
	1	0		23·27	515·2	49·0	651·6	49·6	H
	2	0†		20·82	533·7	49·8	692·5	50·5	H
	3	0†		29·37	545·1	50·5	702·8	51·5	H
	4	0†		20·40	548·6	51·3	734·3	52·5	H
	5	0†		11·28	552·2	52·1	757·6	53·0	H
	6	0		18·97	534·6	52·7	742·1	53·5	W
	7	0		20·08	532·2	52·9	682·9	53·8	W
	8	0		18·00	527·4	53·0	671·4	54·0	W
	9	0†		13·72	539·4	53·1	650·3	54·0	W
	10	0		18·07	529·2	53·3	634·2	54·2	W
	11	0		15·47	526·4	53·4	632·0	54·3	H
	12	0		14·68	534·4	53·5	619·5	54·5	H
	13	0†	25	18·90	525·0	53·7	599·6	54·5	H
	14	0†		10·33	518·8	53·7	396·4	54·5	H
	15	0†		07·11	537·1	53·8	429·3	54·9	H
	16	0†		15·85	541·2	53·9	398·5	55·2	H
	17	0†		23·85	538·7	54·0	325·2	55·4	H
	18	0†		43·82	508·5	54·2	291·8	55·4	H
	19	0†		33·38	497·4	54·4	377·4	55·6	W
	20	0†		31·72	495·7	54·6	486·3	55·5	W
	21	0†		24·66	484·7	54·6	559·1	55·4	B
	22	0†		25·44	497·0	54·6	615·1	55·4	W
	23	0†		24·15	483·6	54·7	668·5	55·7	W
1	0	0†		21·26	511·9	55·0	679·5	56·0	B
	1	0†		29·90	544·0	55·3	893·5	56·3	B
	2	0†		24·20	525·6	55·7	794·1	56·5	W
	3	0†		24·22	538·8	55·9	748·0	56·7	W
	4	0†		14·23	574·5	55·9	880·3	56·7	W

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
1	5	0†	25	05·50	564·5	56·0	815·6	56·7	W
	6	0†		15·72	545·9	55·9	899·6	56·5	B
	7	0†		23·88	507·2	55·9	648·3	56·6	W
	8	0†		09·12	506·3	55·9	760·8	56·8	W
	9	0†		02·87	499·7	55·8	636·8	56·7	H
	10	0†	25	15·11	496·3	55·8	460·7	56·7	H
	11	0†	24	59·10	533·5	55·8	511·8	56·5	B
	12	0†	25	15·45	528·5	55·7	589·3	56·5	B
	13	0	25	16·75	528·5	55·5	608·0	56·1	B
	14	0		17·29	530·0	55·2	608·8	55·8	B
	15	0		16·73	529·1	55·0	621·8	55·5	B
	16	0		16·23	531·8	54·8	624·9	55·1	B
	17	0		15·91	532·4	54·6	630·4	54·8	B
	18	0		14·84	536·1	54·3	630·7	54·6	B
	19	0		14·82	535·5	54·1	635·8	54·5	H
	20	0		13·90	532·9	54·0	641·1	54·3	H
	21	0		14·80	524·6	54·0	644·3	54·3	W
	22	0		15·83	524·7	53·9	646·5	54·5	H
	23	0		20·89	522·4	54·0	634·1	54·7	H
2	0	0		20·87	527·5	54·3	625·4	55·3	H
	1	0		21·48	522·7	54·8	623·6	55·7	H
	2	0		20·82	527·4	55·3	621·8	56·3	H
	3	0		20·55	526·1	56·0	627·7	57·0	H
	4	0		18·84	526·3	56·6	630·5	57·6	H
	5	0		17·02	534·3	57·1	638·1	58·0	H
	6	0†		15·91	546·1	57·6	681·8	58·0	B
	7	0†		01·83	526·7	57·7	773·3	58·0	B
	8	0†		17·29	523·0	57·6	725·5	57·9	B
	9	0†		17·12	529·3	57·4	677·4	57·6	B
	10	0		15·44	536·2	57·0	655·3	57·2	B
	11	0		15·78	534·5	56·8	640·3	56·8	W
	12	0†		14·91	527·0	56·4	627·6	56·4	W
	13	0†	25	13·83	531·6	56·0	574·8	56·2	W
	14	0†		14·06	530·9	55·9	597·2	56·0	W
	15	0		16·28	531·3	55·8	614·1	56·0	W
	16	0†		18·05	533·6	55·7	611·2	55·8	W
	17	0		14·77	533·7	55·5	621·8	55·7	W
	18	0		15·44	535·7	55·3	626·6	55·5	W
	19	0		14·94	536·8	55·3	629·1	55·5	B
	20	0		14·33	530·8	55·1	631·8	55·3	B
	21	0		13·30	526·9	55·1	633·5	55·3	H
	22	0		14·73	521·8	55·1	639·2	55·4	H
	23	0		17·07	518·3	55·1	641·1	55·6	B
3	0	0		20·27	516·1	55·5	637·4	56·0	B
	1	0		23·07	519·2	55·9	633·9	56·4	B
	2	0†		27·22	527·6	56·3	644·9	56·9	B
	3	0†		21·57	519·8	56·8	664·7	57·3	B
	4	0		21·27	533·2	57·1	660·8	57·8	B
	5	0		19·12	536·5	57·4	657·9	58·0	B
	6	0		17·73	532·1	57·7	649·7	58·0	W
	7	0		17·31	533·5	57·7	645·1	57·9	W
	8	0		16·48	535·0	57·4	640·9	57·5	W
	9	0		15·17	528·9	57·1	644·6	57·2	W
	10	0		15·59	531·0	56·9	642·6	56·8	W
	11	0		13·79	534·6	56·4	629·1	56·3	H
	12	0		12·90	531·9	56·1	621·6	55·9	H

DECLINATION. Magnet untouched, Aug. 5ᵈ—Oct. 6ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, $k=0·000140$. BALANCE. Observed 3ᵐ after the Declination, $k=0·0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.	Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.							Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°		d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
3	13	0	25	13·39	533·0	55·8	622·0	55·5	H	6	21	0	25	13·29	527·2	46·0	636·5	45·5	B
	14	0		13·93	527·8	55·3	627·7	55·0	H		22	0		13·32	525·8	45·8	635·3	45·4	W
	15	0		16·01	530·0	55·0	629·1	54·5	H		23	0		14·65	524·8	45·7	626·5	45·6	W
	16	0		15·36	530·2	54·5	631·3	54·2	H	7	0	0		17·74	528·2	45·8	628·9	46·3	W
	17	7		15·25	530·2	54·2	632·8	53·6	H		1	0		20·18	528·9	46·3	628·9	47·0	W
	18	0		15·04	528·8	53·9	634·0	53·4	H		2	0		19·12	528·0	47·0	634·8	47·9	W
	19	0		15·41	533·1	53·7	629·0	53·0	W		3	0		18·21	533·1	47·7	635·2	48·6	W
	20	0		14·65	532·7	53·3	634·5	52·7	W		4	0		17·13	541·4	48·2	633·7	49·2	W
	21	0		13·88	528·5	53·0	634·8	52·5	B		5	0		15·67	537·9	48·8	632·7	49·5	W
	22	0		14·71	523·8	52·8	638·1	52·4	W		6	0		15·59	538·0	49·1	634·3	49·7	H
	23	0		17·04	521·1	52·7	634·0	52·4	W		7	0		15·22	537·1	49·1	632·3	49·5	H
4	0	0		18·99	522·3	52·7	629·7	52·6	W		8	0		15·09	538·7	49·1	631·2	49·5	H
	1	0		21·86	526·7	52·8	618·9	52·8	W		9	0		14·68	536·5	49·0	632·1	49·3	H
	2	0		22·72	529·8	52·9	623·3	53·2	W		10	0†		09·69	542·0	48·7	625·7	49·0	H
	3	0		23·07	537·0	53·1	629·6	53·5	W		11	0†		12·35	543·5	48·4	610·5	48·5	B
	4	0		22·91	533·1	53·3	638·9	53·8	W		12	0		09·12	533·4	48·0	606·3	48·0	B
	5	0		18·38	534·0	53·4	644·7	53·9	W										
	6	0		18·87	532·1	53·4	649·3	54·0	H		13	0	25	09·05	529·0	47·6	609·6	47·5	B
	7	0		17·65	532·8	53·4	643·9	53·9	H		14	0		11·84	527·2	47·1	610·5	46·7	B
	8	0		14·31	531·9	53·3	648·5	53·7	H		15	0		16·15	523·9	46·6	603·4	46·0	B
	9	0		16·72	533·8	53·2	642·1	53·5	H		16	0		11·99	531·5	46·0	595·6	45·5	B
	10	0		11·24	533·0	53·2	625·3	53·4	H		17	0		11·57	521·2	45·5	608·6	45·0	B
	11	0		14·57	529·4	53·0	631·3	53·2	B		18	0		15·15	532·7	45·0	607·3	44·5	B
	12	0		14·82	542·0	52·9	600·1	53·0	B		19	0		12·98	532·1	44·6	615·7	44·0	H
											20	0		12·36	530·2	44·1	627·4	43·7	H
	13	0	25	11·99	531·0	52·8	608·7	52·8	B		21	0		12·42	529·6	43·8	629·2	43·4	W
	14	0		12·46	532·5	52·7	600·6	52·5	B		22	0		13·96	525·3	43·5	629·8	43·2	H
	15	0		14·04	528·4	52·3	623·7	52·0	B		23	0		16·43	522·0	43·2	628·3	43·2	H
	16	0		15·04	530·8	52·0	627·9	51·7	B	8	0	0		18·90	507·2	43·2	629·6	43·5	H
	17	0		13·32	531·5	51·8	626·8	51·5	B		1	0		20·96	530·1	43·3	630·1	43·7	H
	18	0		15·14	533·4	51·6	628·1	51·0	B		2	0		21·46	529·4	43·6	639·5	44·3	H
	19	0		14·71	526·8	51·2	630·2	50·8	H		3	0		20·74	527·0	44·0	645·0	45·0	H
	20	0		17·68	529·9	51·0	632·8	50·6	H		4	0		18·97	536·5	44·6	644·2	45·5	H
	21	0		15·41	526·0	50·9	638·1	50·5	W		5	0		16·89	537·1	45·0	646·0	46·0	H
	22	0		15·20	525·0	50·7	643·4	50·5	H		6	0		15·96	536·3	45·6	642·0	46·2	B
	23	0		19·08	529·8	50·6	637·5	50·5	H		7	0		15·67	538·6	45·9	638·1	46·5	B
5	0	0		19·64	523·5	50·6	632·3	50·5	H		8	0		15·38	539·2	46·1	633·7	46·8	B
	1	0		20·85	523·1	50·6	628·9	50·7	H		9	0		15·05	538·1	46·3	633·8	47·0	B
	2	0		20·92	529·3	50·7	627·9	50·9	H		10	0		14·62	537·0	46·5	632·4	47·0	B
	3	0		20·22	530·5	50·8	631·1	51·0	H		11	0		15·20	537·8	46·7	635·3	47·3	W
	4	0		19·55	536·8	51·0	637·9	51·5	H		12	0		14·10	536·8	46·8	634·7	47·4	W
	5	0		18·74	540·1	51·3	640·5	51·9	H										
	6	0		16·68	536·1	51·8	648·0	52·0	B		13	0	25	13·19	534·6	46·9	632·7	47·5	W
	7	0		18·75	533·7	51·9	648·9	52·0	B		14	0		11·55	532·9	46·9	629·7	47·5	W
	8	0		18·41	536·8	51·9	652·0	52·0	B		15	0		15·02	534·9	47·0	623·3	47·6	W
	9	0†		08·56	538·0	51·7	639·2	51·5	B		16	0		13·03	535·6	47·0	612·6	47·6	W
	10	0†		10·13	526·3	51·4	639·4	51·3	B		17	0		13·20	537·1	47·0	615·6	47·5	W
	11	0		13·74	530·1	51·0	637·3	51·0	W		18	0		13·76	535·9	47·0	619·6	47·5	W
	12	0		13·77	530·9	50·8	632·0	50·5	W		19	0		13·25	535·3	47·0	623·1	47·5	B
											20	0		13·10	534·0	47·0	626·9	47·4	B
6	13	0	25	15·74	531·1	48·9	628·7	48·7	H		21	0		12·98	530·2	47·0	629·6	47·4	H
	14	0		15·99	534·1	48·7	630·4	48·3	H		22	0		15·38	527·3	47·0	630·8	47·4	H
	15	0		15·32	532·4	48·2	631·9	47·9	H		23	0		17·63	524·7	47·0	627·2	47·5	H
	16	0		15·81	530·4	47·9	632·6	47·4	H	9	0	0		20·30	532·7	47·1	625·6	47·7	B
	17	0		15·45	530·1	47·5	632·4	47·0	H		1	0		19·79	530·2	47·4	628·9	47·9	B
	18	0		15·14	531·0	47·0	632·9	46·8	H		2	0		20·29	532·4	47·6	632·8	48·2	H
	19	0		15·04	529·8	46·8	615·1	46·2	W		3	0		18·65	532·6	47·8	636·2	48·3	H
	20	0		12·01	529·9	46·4	634·7	45·8	W		4	0		15·92	532·5	47·8	636·2	48·5	H

DECLINATION. Torsion removed, Oct. 6^d 19^h, $-$ 10¼°. Effect of + 10° of Torsion = $-$ 0′·84.
BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·0000085.

† Extra Observations made.

Oct. 6^d 19^h + The observation for the torsion of the declinometer thread was not good; the amount may have been less than that stated, but no time was left to determine.

Oct. 6^d—7^d. Experiments made to determine the effect of the copper ring on the declination magnet.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
9	5	0	25	15·32	534·6	48·0	635·2	48·8	H
	6	0		14·91	535·2	48·1	629·7	49·0	W
	7	0		14·68	539·0	48·4	626·4	49·2	W
	8	0		14·89	538·7	48·7	624·8	49·4	W
	9	0		14·75	537·8	48·8	624·8	49·5	W
	10	0		14·06	539·3	49·0	624·7	49·7	W
	11	0		14·26	536·7	49·1	624·6	49·9	H
	12	0		14·44	535·6	49·4	624·0	50·2	H
	13	0	25	14·67	536·3	49·8	623·4	50·7	H
	14	0		14·21	535·7	50·0	619·0	50·9	H
	15	0		13·49	536·2	50·3	616·0	51·3	H
	16	0		13·97	536·1	50·6	614·2	51·7	H
	17	0		13·74	536·9	50·8	613·2	51·8	H
	18	0		12·49	535·7	51·0	611·8	51·8	H
	19	0		14·04	535·2	51·0	614·1	51·9	W
	20	0		13·29	534·7	51·1	617·4	51·7	W
	21	0		12·35	531·2	51·0	619·5	51·7	B
	22	0		13·23	526·9	51·0	618·3	51·6	W
	23	5		16·05	526·0	51·2	615·5	52·0	W
10	0	0		18·10	526·9	51·7	611·4	52·5	B
	1	0		19·31	528·9	52·1	608·8	53·2	W
	2	0		19·39	531·5	52·8	606·1	54·0	W
	3	0		18·99	536·2	53·4	610·8	54·8	W
	4	0		16·90	536·7	54·0	616·4	55·5	W
	5	0		15·85	536·7	54·8	618·5	56·0	W
	6	0		15·64	536·8	55·2	611·5	56·2	H
	7	0		14·96	541·1	55·5	613·0	56·5	H
	8	0		15·36	537·5	55·7	616·4	56·3	H
	9	0		13·63	538·1	55·5	617·6	56·0	H
	10	0		15·01	537·8	55·2	616·1	55·7	H
	11	0		14·60	336·1	54·9	615·0	55·3	B
	12	0		15·36	534·5	54·6	615·1	54·9	B
	13	0	25	14·37	536·3	54·2	612·4	54·5	B
	14	0		14·06	535·1	53·9	614·2	54·0	B
	15	0		13·69	534·9	53·6	613·4	53·5	B
	16	0		14·06	535·2	53·2	613·8	53·1	B
	17	0		14·23	535·8	52·9	613·6	52·8	B
	18	0		14·18	535·7	52·7	613·7	52·5	B
	19	0		13·90	534·6	52·3	614·9	52·2	H
	20	0		13·59	533·3	52·2	619·4	52·0	H
	21	0		12·98	528·8	52·0	621·6	51·9	W
	22	0		13·84	524·5	51·8	622·7	52·0	H
	23	0		16·23	526·3	52·0	621·0	52·3	W
11	0	0		18·58	527·5	52·1	615·7	52·6	H
	1	0		19·71	532·8	52·4	611·9	53·1	H
	2	0		19·04	535·0	52·8	614·6	53·7	H
	3	0		18·21	538·9	53·3	615·3	54·2	H
	4	0		16·82	539·0	53·8	617·8	54·8	H
	5	0		15·96	539·4	54·1	613·6	55·0	H
	6	0		15·31	538·4	54·5	612·4	55·1	B
	7	0		15·38	539·4	54·6	609·7	55·1	B
	8	0		15·01	538·6	54·6	609·8	55·1	B
	9	0		15·01	538·2	54·5	609·6	55·0	B
	10	0		14·21	542·0	54·3	606·1	54·8	B
	11	0		13·64	535·3	54·1	611·5	54·5	W
	12	0		14·41	534·9	53·9	610·7	54·1	W
11	13	0	25	13·86	534·5	53·6	613·0	53·6	W
	14	0		13·63	533·7	53·1	613·9	53·0	W
	15	0		13·93	533·9	52·8	616·7	52·7	W
	16	0		12·96	534·3	52·5	615·5	52·2	W
	17	0		13·54	535·1	52·0	614·6	51·8	W
	18	0		13·52	535·3	51·7	612·7	51·3	W
	19	0		13·52	528·7	51·4	610·5	50·6	H
	20	0		13·20	532·7	50·9	613·9	50·3	H
	21	0		12·93	529·5	50·7	619·5	49·9	B
	22	0		13·49	525·3	50·3	617·2	49·7	B
	23	0		16·21	522·4	50·0	615·6	49·8	B
12	0	0		18·01	522·5	50·0	617·9	50·0	H
	1	0		20·32	526·0	50·2	615·9	50·5	H
	2	0		21·43	532·7	50·4	615·0	51·0	H
	3	0		19·93	533·9	51·0	619·9	51·5	H
	4	0		18·37	536·2	51·4	624·4	52·0	H
	5	0		16·28	538·1	51·7	623·5	52·2	H
	6	0		15·78	540·2	51·9	619·8	52·5	W
	7	0		16·30	538·7	52·0	617·7	52·7	W
	8	0		15·20	540·3	52·3	614·8	52·9	W
	9	0		14·48	540·7	52·3	613·8	53·0	W
	10	0		14·35	539·8	52·4	612·5	53·0	W
	11	0		14·28	539·7	52·6	611·8	53·2	H
	12	0		14·11	538·7	52·7	610·4	53·3	H
13	13	0	25	09·71	543·2	55·5	606·0	55·8	B
	14	0		10·38	536·0	55·4	606·0	55·7	B
	15	0		11·57	539·2	55·3	602·0	55·6	B
	16	0		11·77	537·4	55·1	603·7	55·5	B
	17	0		14·31	540·1	55·0	602·9	55·2	B
	18	0		13·66	539·7	54·9	603·3	54·9	B
	19	0		12·60	537·5	54·6	605·7	54·6	H
	20	0		12·93	537·4	54·4	607·1	54·3	H
	21	0		11·86	533·5	54·1	608·3	54·1	W
	22	0		12·28	529·5	53·9	611·2	54·0	H
	23	0		14·28	228·0	53·9	609·4	54·1	H
14	0	0		17·54	527·9	53·9	604·1	54·2	H
	1	0		19·76	529·6	53·9	603·4	54·3	H
	2	0		20·92	531·6	53·9	605·0	54·5	H
	3	0		19·69	534·1	54·1	606·4	54·6	H
	4	0		18·47	539·0	54·3	610·3	54·8	H
	5	0		16·46	538·7	54·5	615·9	55·0	H
	6	0		15·67	542·6	54·7	612·6	55·0	B
	7	0		15·88	542·4	54·7	610·4	55·0	B
	8	0		16·41	542·4	54·6	609·8	54·9	B
	9	0		13·49	538·2	54·4	615·3	54·7	B
	10	0		13·54	538·2	54·2	613·3	54·3	B
	11	0		11·62	535·8	54·0	618·6	54·0	W
	12	0		12·80	533·2	53·6	615·8	53·4	W
	13	0	25	14·71	534·2	53·2	608·6	53·0	W
	14	0		15·52	532·9	52·9	605·5	52·6	W
	15	0		14·80	536·6	52·7	598·4	52·4	W
	16	0		14·87	533·5	52·4	602·8	52·1	W
	17	0		12·90	534·8	52·1	602·7	51·9	W
	18	0		14·65	535·9	51·9	601·5	51·6	W
	19	0		14·41	536·6	51·8	597·5	51·3	B
	20	0		12·26	536·7	51·6	601·1	51·0	B

DECLINATION. Magnet untouched, Oct. 6d—16d.

BIFILAR. Observed 2m after the Declination, $k=0·000140$. BALANCE. Observed 3m after the Declination, $k=0·0000085$.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
14	21	0	25	13·52	525·3	51·4	610·1	50·9	H
	22	0		14·15	526·2	51·2	611·3	50·8	H
	23	0		15·76	525·5	51·0	610·8	50·8	B
15	0	0		19·10	526·8	51·0	607·0	51·0	B
	1	0		21·06	526·0	51·2	610·5	51·5	H
	2	0		21·68	531·1	51·6	608·5	52·1	B
	3	0		20·42	534·7	52·1	611·4	52·7	H
	4	0		18·79	536·6	52·6	619·1	53·3	B
	5	0		17·36	537·4	53·0	626·1	53·8	B
	6	0		16·05	536·7	53·4	624·5	54·1	W
	7	0		15·14	537·6	53·6	620·4	54·2	W
	8	0		13·49	538·8	53·6	615·5	54·0	W
	9	0		13·70	539·0	53·6	614·7	54·0	W
	10	0		13·44	538·3	53·4	610·8	53·8	W
	11	0		12·98	537·3	53·2	609·7	53·5	H
	12	0		12·58	537·7	53·0	604·5	53·0	H
	13	0	25	10·90	534·7	52·8	601·5	52·8	H
	14	0		12·08	541·2	52·6	593·5	52·6	H
	15	0		13·22	534·5	52·4	600·6	52·5	H
	16	0		14·06	535·6	52·2	604·7	52·3	H
	17	0		14·20	536·7	52·0	603·9	52·0	H
	18	0		13·81	536·3	51·8	607·2	51·7	H
	19	0		13·36	538·1	51·6	609·6	51·5	W
	20	0		12·31	536·5	51·3	613·6	51·1	W
	21	0		11·77	532·0	51·1	617·7	50·9	B
	22	0		12·20	528·6	51·0	617·8	50·7	W
	23	0		15·02	522·9	50·9	613·2	50·7	W
16	0	0		15·62	524·1	50·9	610·2	50·9	W
	1	0		19·32	526·9	51·0	610·1	51·5	W
	2	0		20·29	532·2	51·4	609·3	52·1	W
	3	0		19·07	534·5	52·0	613·7	52·8	W
	4	0		17·29	536·4	52·6	613·7	53·3	W
	5	0		16·12	537·0	52·9	613·6	53·5	W
	6	0		14·67	537·6	53·0	610·4	53·6	H
	7	0		14·40	538·3	53·0	609·1	53·6	H
	8	0		14·11	537·6	53·0	609·1	53 5	H
	9	0		14·21	538·3	52·9	607·9	53·3	H
	10	0		13·79	539·1	52·7	604·7	53·0	H
	11	0		13·43	538·3	52·6	603·9	52·7	B
	12	0		12·92	537·9	52·3	600·4	52·3	B
	13	0	25	14·13	534·9	52·0	601·5	52·0	B
	14	0		16·26	540·1	51·8	587·3	51·7	B
	15	0		13·17	537·7	51·6	587·5	51·5	B
	16	0		13·16	537·2	51·3	592·2	51·2	B
	17	0		12·67	537·7	51·1	596·2	51·0	B
	18	0		13·25	538·0	50·9	600·4	50·7	B
	19	0		13·83	536·1	50·7	603·7	50·5	H
	20	0		12·08	535·9	50·6	610·9	50·3	H
	21	0		11·22	531·9	50·4	616·0	50·2	W
	22	0		11·91	527·0	50·2	618·2	50·1	H
	23	0		14·41	522·7	50·1	616·4	50·1	H
17	0	0		19·22	525·4	50·1	611·5	50·0	H
	1	0		20·63	526·8	50·0	609·0	50·0	H
	2	0		20·38	530·7	50·1	607·6	50·2	H
	3	0		20·55	539·2	50·1	616·5	50·3	H
	4	0		19·19	535·2	50·2	626·2	50·5	H

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
17	5	0	25	17·83	535·6	50·3	631·8	50·6	H
	6	0		17·89	533·1	50·4	630·7	50·5	B
	7	0		15·81	533·3	50·4	631·0	50·4	W
	8	6		15·27	534·6	50·4	634·4	50·4	H
	9	0		13·83	533·6	50·2	631·2	50·3	B
	10	0		10·56	530·6	50·0	632·9	50·0	B
	11	0		09·74	530·6	50·0	628·3	49·9	W
	12	0		11·42	533·7	49·9	622·4	49·8	W
	13	0	25	10·11	532·5	49·7	618·6	49·6	W
	14	0		11·30	535·7	49·6	612·5	49·5	W
	15	0		13·57	535·3	49·4	614·3	49·3	W
	16	0		12·65	536·0	49·2	614·0	49·1	W
	17	0		14·20	534·8	49·0	616·6	49·0	W
	18	0		14·48	539·8	48·9	611·5	48·8	W
	19	0		12·45	536·9	48·8	613·0	48·5	B
	20	0		12·02	535·3	48·7	618·7	48·4	B
	21	0		11·37	534·8	48·5	618·5	48·3	H
	22	0		12·72	528·4	48·3	616·0	48·2	H
	23	0		16·66	521·9	48·3	614·4	48·2	B
18	0	0		21·74	530·7	48·3	612·5	48·5	H
	1	0		23·22	534·7	48·5	612·1	48·8	H
	2	0		24·39	535·2	48·9	613·8	49·5	B
	3	0		22·87	539·2	49·3	614·8	49·9	B
	4	0		21·71	538·1	49·7	625·7	50·2	H
	5	0		18·57	536·7	49·9	636·1	50·2	B
	6	0		18·50	536·4	49·9	633·6	50·3	W
	7	0		16·86	538·4	49·9	632·1	50·3	W
	8	0		14·98	540·2	49·8	626·2	50·0	W
	9	0		14·10	539·5	49·7	622·7	49·8	W
	10	0		13·44	540·0	49·4	618·2	49·5	W
	11	0		13·34	539·6	49·0	614·7	49·0	H
	12	0		12·96	539·8	48·7	614·8	48·4	H
	13	0	25	13·84	538·9	48·2	613·1	47·7	H
	14	0		13·56	538·3	47·7	612·9	47·0	H
	15	0		13·63	536·6	47·2	614·0	46·4	H
	16	0		13·59	538·8	46·7	614·7	45·7	H
	17	0		13·39	536·4	46·0	616·6	45·2	H
	18	0		14·67	536·1	45·5	618·4	44·5	H
	19	0		13·83	537·2	45·0	621·7	44·0	W
	20	0		13·03	535·4	44·5	625·7	43·4	W
	21	2		12·42	532·0	43·9	631·4	42·9	B
	22	0		13·50	527·9	43·5	632·4	42·5	W
	23	0		16·13	526·9	43·1	622·9	42·4	W
19	0	0		18·84	528·3	42·9	620·6	42·4	W
	1	0		18·79	530·5	42·9	622·9	42·5	W
	2	0		18·88	533·9	42·9	628·5	43·2	W
	3	0		18·50	535·1	43·3	630·6	43·9	W
	4	0		17·37	537·8	44·0	633·9	44·8	W
	5	0		15·96	539·2	44·9	633·2	45·5	W
	6	0		15·98	542·1	45·4	630·9	46·0	H
	7	0		15·31	540·9	45·7	628·5	46·2	H
	8	0		14·41	542·0	45·8	627·1	46·3	H
	9	0		12·80	539·7	45·8	628·0	46·0	H
	10	0		12·72	548·5	45·7	617·5	45·7	H
	11	0		12·16	548·6	45·4	609·4	45·5	B
	12	0		11·17	538·0	45·0	605·6	45·2	B

DECLINATION. Torsion removed, Oct. $16^d\ 4^h$, $+\ 9\frac{1}{2}°$. Effect of $+\ 10°$ of Torsion $=\ -\ 0'·84$.

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·0000085.

Oct. $15^d\ 4^h$ + Experiments were made to determine the effect of the copper ring on the position of the declination magnet. All the scale readings since Oct. $6^d\ 23^h$ have been corrected by + 1·7 Sc. div. for the effect of the copper ring in the position which it has occupied since that time. The use of the copper ring was discontinued after Oct. $15^d\ 4^h$.

Oct. $15^d\ 23^h$—$16^d\ 4^h$. Observations made to determine the zero point of the declination scale.

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
20	13	0	25 14·60	532·5	43·7	638·0	43·6	W
	14	0†	11·21	521·9	43·3	618·3	43·2	W
	15	0†	14·71	507·0	43·0	389·9	42·9	W
	16	0†	21·21	536·0	42·7	314·4	42·6	W
	17	0†	25·16	501·7	42·4	142·8	42·3	W
	18	0†	28·01	460·5	42·0	334·7	42·0	W
	19	0†	36·52	503·1	41·8	338·4	41·5	B
	20	0†	19·75	519·8	41·5	510·6	41·2	B
	21	0†	17·33	510·3	41·2	557·5	40·7	H
	22	0†	22·69	468·8	40·8	625·4	40·7	H
	23	0†	26·30	508·9	40·7	676·4	40·8	B
21	0	0†	23·99	496·2	40·8	690·2	41·5	B
	1	0†	31·36	519·6	41·3	685·2	42·2	H
	2	0†	25·11	532·6	42·2	714·4	43·6	H
	3	0†	13·76	533·3	43·2	763·2	44·7	B
	4	0†	19·84	526·7	44·2	704·9	45·6	B
	5	0†	19·24	521·6	45·1	683·6	46·3	B
	6	0†	16·70	524·7	45·6	651·0	46·7	W
	7	0†	07·31	530·1	46·0	638·2	47·0	W
	8	0	13·59	525·0	46·3	627·5	47·4	W
	9	0†	05·87	555·8	46·6	593·5	47·4	W
	10	0†	07·78	533·9	46·6	556·0	47·4	W
	11	0†	06·03	535·7	46·5	539·7	47·3	H
	12	0	07·67	525·3	46·4	549·0	47·2	H
	13	0	25 12·65	523·5	46·2	573·2	46·7	H
	14	0	14·55	527·1	46·0	579·9	46·3	H
	15	0	15·56	518·6	45·8	585·6	46·0	H
	16	0	16·92	527·2	45·4	542·3	45·5	H
	17	0	15·47	532·1	45·0	561·5	45·3	H
	18	0	12·58	533·8	44·8	573·9	45·0	H
	19	0	12·89	530·0	44·6	591·3	44·6	W
	20	0	13·30	527·0	44·2	598·8	44·2	W
	21	0	13·29	521·1	43·9	608·5	43·8	B
	22	0	14·24	521·0	43·7	613·3	43·6	W
	23	0	15·98	516·6	43·5	617·7	43·5	W
22	0	0	20·15	526·1	43·4	620·9	43·8	W
	1	0	21·09	524·2	43·7	626·7	44·5	W
	2	0	20·20	530·8	44·3	633·3	45·5	W
	3	0	19·96	534·9	45·3	634·9	46·7	W
	4	0	11·41	534·8	46·4	653·2	47·8	W
	5	0	15·85	532·0	47·6	630·2	48·7	W
	6	0	13·02	534·0	48·3	618·2	49·2	H
	7	0	14·08	534·4	48·7	618·1	49·5	H
	8	0	14·13	532·5	48·8	615·5	49·3	H
	9	0	03·58	532·9	48·6	616·2	49·0	H
	10	0	11·17	531·5	48·3	611·4	48·5	H
	11	0	14·46	532·7	47·9	608·8	47·8	B
	12	0	13·86	531·4	47·3	608·9	47·1	B
	13	0	25 14·75	533·5	46·8	609·0	46·5	B
	14	0	13·88	529·5	46·3	607·9	45·8	B
	15	0	18·87	533·4	45·8	575·8	45·1	B
	16	0	16·18	528·3	45·1	577·6	44·5	B
	17	0	12·69	534·5	44·5	574·5	43·8	B
	18	0	12·01	534·0	43·9	579·8	43·0	B
	19	0	13·86	533·9	43·3	582·8	42·3	H
	20	0	14·30	524·4	42·7	595·9	41·7	H

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.		
22	21	0	25 15·05	524·1	42·1	606·4	41·0	W
	22	0	15·50	520·3	41·7	609·1	40·5	H
	23	0	18·52	517·3	41·2	616·7	40·6	H
23	0	0	22·08	521·4	41·0	618·6	40·7	H
	1	0	22·08	524·7	41·1	626·0	41·2	H
	2	0	22·77	527·3	41·3	632·9	42·0	H
	3	0	16·82	526·5	42·0	651·6	43·2	H
	4	0	17·09	532·4	43·0	668·1	44·4	H
	5	0	16·66	530·1	44·0	653·6	45·2	H
	6	0	14·77	525·7	44·8	651·0	45·5	B
	7	0	14·35	529·8	45·0	653·4	45·8	B
	8	0	10·85	532·4	45·4	648·6	46·0	B
	9	0	12·92	533·1	45·4	637·6	45·9	B
	10	0	09·00	535·3	45·1	628·8	45·6	B
	11	0	13·52	527·1	45·0	623·1	45·5	B
	12	0	12·33	523·0	44·9	593·7	45·4	H
	13	0	25 13·52	530·4	44·8	569·1	45·0	D
	14	0	12·67	532·0	44·5	568·2	44·6	D
	15	0	11·96	533·4	44·1	577·4	44·3	D
	16	0	12·60	532·5	43·8	588·5	43·8	D
	17	0	12·69	534·0	43·3	591·3	43·5	D
	18	0	13·52	533·1	42·9	599·5	43·0	W
	19	0	14·33	528·6	42·6	607·0	42·6	W
	20	0	13·12	530·6	42·1	605·5	42·0	W
	21	0	13·69	527·0	41·7	607·4	41·3	W
	22	0	14·41	521·5	41·3	611·0	40·9	B
	23	0	17·09	521·4	40·9	611·1	40·7	B
24	0	0	19·82	525·2	40·8	609·8	40·7	B
	1	0	20·40	524·2	40·9	620·0	41·4	H
	2	0	19·91	526·8	41·2	625·2	42·2	H
	3	0	19·26	528·2	41·9	633·9	43·3	H
	4	0	16·30	532·9	42·8	629·6	44·2	H
	5	0	15·02	534·9	43·8	622·5	45·0	B
	6	0	13·74	534·8	44·4	619·9	45·5	D
	7	0	13·88	534·8	44·8	614·3	46·0	D
	8	0	13·72	535·3	45·0	612·0	46·1	B
	9	0	13·47	534·4	45·1	611·6	46·2	B
	10	0†	13·30	532·2	45·1	611·1	46·1	W
	11	0	07·18	530·6	45·0	602·9	45·8	H
	12	0	07·40	530·0	44·9	595·3	45·6	H
	13	0	25 09·12	525·6	44·7	577·9	45·3	H
	14	0	06·71	528·4	44·6	565·6	45·2	H
	15	0	11·17	529·6	44·3	575·9	45·1	H
	16	0	13·25	531·8	44·0	581·4	44·9	H
	17	0	14·06	534·1	44·0	588·1	44·6	H
	18	0	12·67	535·3	43·9	591·9	44·5	H
	19	0	15·69	532·7	43·9	601·6	44·5	W
	20	0	17·06	526·9	43·8	603·8	44·3	W
	21	0†	20·89	513·5	43·8	612·1	44·1	B
	22	0	25·93	513·2	43·7	610·7	44·1	W
	23	0	24·32	512·0	43·8	614·4	44·5	W
25	0	0	26·37	526·3	44·0	621·1	45·0	W
	1	0	22·28	529·3	44·3	627·5	45·3	W
	2	0	20·05	534·5	44·7	640·2	45·5	W
	3	0	19·55	526·4	45·0	641·7	45·9	W
	4	0	19·07	526·3	45·4	641·2	46·3	W

DECLINATION. Magnet untouched, Oct. 16ᵈ—Nov. 11ᵈ.
BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.
Oct. 24ᵈ 12ʰ—18ʰ. The observations of the balance are doubtful to the extent of 5 Mic. div.; it is believed, however, that the error (if any) is constant for all these observations.

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.	Göttingen Mean Time of Declination Obs.			Declination.	Bifilar.		Balance.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.						Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°		d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
25	5	0	25 16·73	528·0	45·9	635·7	46·6	W	28	13	0	25 14·15	536·9	44·9	583·3	45·4	B
	6	0	14·37	536·4	46·0	629·0	46·7	H		14	0	12·56	531·9	44·9	593·1	45·5	B
	7	0	11·88	534·8	46·1	630·8	47·0	H		15	0	14·75	532·5	45·0	598·0	45·5	B
	8	0†	25 12·29	512·8	46·3	649·6	47·0	H		16	0	17·58	534·9	45·0	592·9	45·5	B
	9	0†	24 42·42	519·7	46·5	667·0	47·2	H		17	0	18·08	532·2	45·0	572·0	45·5	B
	10	0†	25 05·92	519·5	46·7	616·2	47·4	H		18	0	13·29	538·2	45·0	583·7	45·4	B
	11	0†	25 07·67	527·7	46·8	571·3	47·5	B		19	0	14·70	535·9	44·9	585·2	45·2	H
	12	0†	24 54·65	507·7	46·8	536·1	47·5	B		20	0	15·36	529·7	44·8	591·9	45·0	H
										21	0	14·44	529·2	44·6	589·9	44·8	W
	13	0†	25 08·86	519·0	46·9	418·3	47·6	B		22	0	15·64	525·4	44·3	594·1	44·5	H
	14	0†	10·90	528·6	47·0	522·6	47·7	B		23	0	18·48	525·1	44·1	595·1	44·5	H
	15	0†	06·36	533·0	47·0	544·8	47·7	B	29	0	0	20·99	522·4	44·0	600·0	44·5	H
	16	0†	15·74	526·9	47·0	564·3	47·6	B		1	0	19·64	522·8	44·0	604·4	44·6	H
	17	0†	25·33	529·1	47·0	504·6	47·6	B		2	0	21·39	524·7	44·2	611·2	44·9	H
	18	0†	12·45	544·2	47·0	545·6	47·7	B		3	0	19·99	532·4	44·5	622·1	45·2	H
	19	0†	17·13	531·5	47·0	564·1	47·6	H		4	0	15·04	530·1	44·8	636·1	45·5	H
	20	0†	23·34	531·7	47·0	571·6	47·6	H		5	0	17·09	529·7	45·0	633·5	45·7	H
	21	0†	20·58	517·0	47·0	576·8	47·5	W		6	0	16·15	532·5	45·2	622·4	45·8	B
	22	0	18·99	515·6	47·1	586·2	47·5	H		7	0	15·39	532·9	45·3	618·7	45·9	B
	23	0†	21·32	477·7	47·2	614·7	47·6	H		8	0†	07·76	534·5	45·4	621·2	45·9	B
26	0	0†	19·81	525·7	47·3	621·7	48·2	H		9	0	05·40	533·0	45·4	598·3	46·0	B
	1	0	20·79	528·6	47·6	614·9	48·5	H		10	0	09·57	530·0	45·5	602·4	46·0	B
	2	0	19·68	535·2	47·8	611·9	48·7	H		11	0	11·84	534·5	45·5	600·4	46·0	W
	3	0	21·83	529·7	48·0	627·3	48·9	H		12	0	13·46	535·5	45·5	596·4	46·0	W
	4	0	20·16	526·7	48·2	647·7	49·0	H									
	5	0†	18·14	524·4	48·3	694·5	49·0	H		13	0	25 12·78	531·8	45·5	598·0	46·0	W
	6	0†	04·21	523·9	48·4	670·6	49·0	B		14	0	13·86	532·5	45·6	599·4	46·0	W
	7	0†	15·72	532·9	48·5	630·8	49·1	B		15	0†	18·60	526·4	45·6	602·3	46·1	W
	8	0†	25 15·04	534·6	48·5	624·9	49·0	B		16	0	18·03	531·2	45·7	591·9	46·2	W
	9	0†	24 51·84	531·1	48·4	581·6	48·9	B		17	0	15·18	535·6	45·8	595·0	46·3	W
	10	0†	25 04·21	517·6	48·3	588·6	48·8	B		18	0	13·17	537·2	45·8	596·6	46·4	W
	11	0†	07·27	510·4	48·3	476·0	48·9	W		19	0	13·46	536·6	45·9	600·2	46·4	B
	12	0†	03·70	531·2	48·2	525·9	48·9	W		20	0	13·77	538·4	45·9	599·6	46·5	B
										21	0	17·09	527·7	46·0	604·3	46·5	H
27	13	0	25 10·75	526·2	45·9	493·3	45·7	H		22	0	19·12	521·1	46·1	604·8	46·5	H
	14	0†	09·62	525·5	45·7	550·3	45·5	H		23	0	19·41	522·8	46·1	606·5	46·7	H
	15	0	13·09	525·9	45·4	570·8	45·2	H	30	0	0	21·86	529·4	46·3	608·0	46·9	B
	16	0	19·08	528·1	45·0	572·0	44·7	H		1	0	22·47	526·3	46·4	608·6	47·0	H
	17	0	15·96	532·5	44·7	578·1	44·2	H		2	0	20·50	534·1	46·5	609·8	47·2	H
	18	0	15·78	536·4	44·3	579·1	43·7	H		3	0	20·60	536·2	46·7	612·3	47·3	H
	19	0	16·23	528·9	43·9	589·1	43·4	W		4	0	18·41	531·7	46·8	613·9	47·4	H
	20	0	13·70	529·7	43·6	596·3	43·0	W		5	0	14·46	534·9	46·9	617·8	47·5	H
	21	0	13·56	529·7	43·3	605·2	42·7	H		6	0	15·38	539·1	47·0	617·0	47·6	W
	22	0	14·70	521·9	43·0	605·3	42·5	W		7	0	15·76	535·9	47·0	615·9	47·7	W
	23	0	18·60	523·8	42·8	604·2	42·4	W		8	0	14·30	536·4	47·1	613·3	47·8	W
28	0	0	18·41	516·1	42·7	608·4	42·5	W		9	0	14·10	536·4	47·2	610·0	47·7	W
	1	0	20·50	529·1	42·7	615·9	42·9	W		10	0	13·69	536·8	47·2	607·2	47·7	W
	2	0	20·45	532·9	42·8	617·2	43·3	W		11	0	13·16	533·9	47·2	607·2	47·7	H
	3	0	18·77	532·0	43·1	624·2	43·7	W		12	0	11·05	535·8	47·2	602·9	47·7	H
	4	0	17·74	535·5	43·4	625·3	44·0	W									
	5	0	16·35	530·8	43·8	628·7	44·3	W		13	0	25 16·92	541·5	47·2	598·6	47·7	H
	6	0	12·62	531·4	43·9	624·5	44·5	H		14	0	14·96	533·0	47·3	591·4	47·7	H
	7	0	12·60	534·3	44·0	621·9	44·7	H		15	0	13·02	535·6	47·3	581·4	47·7	H
	8	0	10·58	529·2	44·3	626·0	44·9	H		16	0	13·25	534·1	47·3	589·3	47·7	H
	9	0	07·17	533·4	44·6	617·2	45·1	H		17	0	13·36	535·4	47·3	595·8	47·8	H
	10	0	07·74	528·6	44·7	608·9	45·2	H		18	0	13·83	536·0	47·4	597·8	47·8	H
	11	0	10·70	524·6	44·8	599·7	45·2	B		19	0	13·66	537·8	47·4	599·4	47·9	W
	12	0	12·98	518·8	44·8	577·8	45·3	B		20	0	13·14	536·7	47·4	599·9	47·9	W

DECLINATION. Magnet untouched, Oct. 16d—Nov. 11d.

BIFILAR. Observed 2m after the Declination, $k=0·000140$. BALANCE. Observed 3m after the Declination, $k=0·0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
30	21	0	25	13·47	534·7	47·4	601·2	47·8	B
	22	0		14·04	531·2	47·5	599·1	47·9	W
	23	0		15·92	531·0	47·5	594·5	47·9	W
31	0	0		17·67	529·7	47·6	597·6	48·0	W
	1	0		19·12	531·8	47·7	597·9	48·2	W
	2	0		19·62	537·4	47·8	597·5	48·3	W
	3	0		18·52	531·8	48·0	599·7	48·4	W
	4	0		16·86	534·3	48·0	603·1	48·5	W
	5	0		16·32	536·4	48·0	602·7	48·5	W
	6	0		16·48	543·9	48·0	600·6	48·5	H
	7	0		17·06	527·1	48·0	626·4	48·5	H
	8	0		13·69	536·0	48·0	616·3	48·4	H
	9	0†		17·67	520·7	48·0	576·8	48·4	H
	10	0		09·67	532·1	48·0	598·2	48·5	H
	11	0		12·48	531·9	48·0	601·3	48·5	B
	12	0		12·69	533·1	48·0	600·7	48·5	B
	13	0	25	13·19	534·2	48·0	599·1	48·5	B
	14	0		15·42	534·2	47·9	599·1	48·4	B
	15	0		13·84	533·9	47·9	598·3	48·3	B
	16	0		13·79	534·4	47·9	598·9	48·2	B
	17	0		13·02	534·9	47·8	597·9	48·0	B
	18	0		13·56	533·7	47·8	599·8	48·0	B
	19	0		14·24	532·6	47·7	601·3	48·0	H
	20	0		13·77	534·6	47·6	597·0	47·8	H
	21	0		13·70	534·9	47·6	598·2	47·7	W
	22	0		14·28	532·9	47·5	596·6	47·6	H
	23	0		15·76	531·0	47·4	597·1	47·5	H
1	0	0		17·94	533·1	47·4	595·7	47·5	H
	1	0		19·71	539·5	47·4	596·8	47·7	H
	2	0		19·02	538·5	47·4	595·8	47·8	H
	3	0		19·66	543·3	47·5	598·9	48·0	H
	4	0		18·03	542·5	47·7	602·7	48·0	H
	5	0		17·96	537·4	47·7	604·1	48·0	H
	6	0		14·87	547·6	47·6	605·9	47·7	B
	7	0†		18·28	528·6	47·4	635·8	47·5	B
	8	0		11·55	532·7	47·4	635·3	47·5	B
	9	0		14·99	538·3	47·2	619·6	47·4	B
	10	0		12·75	534·8	47·0	614·2	47·1	B
	11	0†		05·52	541·3	47·0	593·4	47·0	W
	12	0		09·87	528·6	46·9	593·2	46·9	W
	13	0	25	13·30	536·2	46·8	596·7	46·9	W
	14	0		09·46	531·0	46·7	595·5	46·8	W
	15	0		16·12	531·0	46·6	600·4	46·5	W
	16	0		11·03	531·7	46·3	593·7	46·4	W
	17	0		13·57	534·9	46·1	599·1	46·2	W
	18	0		13·19	536·9	46·0	599·8	46·0	W
	19	0		13·76	533·5	45·9	602·0	45·9	B
	20	0		14·82	531·2	45·8	599·5	45·7	B
	21	0		15·81	530·7	45·7	598·7	45·5	H
	22	0		16·32	520·5	45·5	601·4	45·4	H
	23	0		15·85	523·6	45·3	598·0	45·3	B
2	0	0		17·49	531·4	45·2	592·4	45·3	B
	1	0		20·49	533·0	45·2	598·8	45·4	B
	2	0		19·89	535·6	45·2	599·7	45·5	B
	3	0		19·49	530·0	45·3	606·8	45·6	B
	4	0		18·16	536·4	45·4	607·2	45·7	H

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
2	5	0	25	18·67	540·9	45·3	612·3	45·7	B
	6	0†		17·89	524·2	45·3	620·6	45·7	W
	7	0		16·55	538·8	45·3	623·0	45·7	W
	8	0		15·58	537·4	45·2	624·0	45·7	W
	9	0		11·75	543·3	45·2	616·1	45·5	W
	10	0†		04·88	530·8	45·1	598·7	45·5	W
	11	0†		15·81	537·7	45·1	572·9	45·4	H
	12	0†		04·04	528·2	45·1	578·3	45·4	H
3	13	0	25	12·80	533·1	44·0	599·3	44·0	B
	14	0		12·70	534·4	43·9	597·1	44·0	B
	15	0		13·86	531·4	43·8	596·9	44·0	B
	16	0		13·44	533·5	43·8	590·3	44·0	B
	17	0		18·10	523·2	43·7	582·2	43·9	B
	18	0		16·82	532·0	43·6	578·6	43·8	B
	19	0		16·25	535·1	43·6	584·8	43·8	H
	20	0		14·43	532·8	43·6	593·0	43·8	H
	21	0		14·24	534·1	43·6	598·3	43·8	W
	22	0		14·26	535·4	43·6	598·8	43·9	H
	23	0		15·41	533·9	43·6	595·9	43·9	H
4	0	0		17·04	533·4	43·6	596·1	43·9	H
	1	0		21·98	539·9	43·6	600·4	43·9	H
	2	0		19·91	528·7	43·6	607·3	44·0	H
	3	0		21·32	543·8	43·6	613·5	44·1	H
	4	0†		14·21	529·9	43·7	629·5	44·2	H
	5	0		21·09	531·2	43·8	638·3	44·2	H
	6	0		17·26	537·6	43·8	621·8	44·2	B
	7	0		15·81	536·3	43·8	622·5	44·1	B
	8	0		14·38	538·6	43·7	620·6	44·0	B
	9	0†		04·91	528·6	43·7	623·6	44·0	B
	10	0†		08·86	529·2	43·6	616·0	44·0	B
	11	0		08·48	527·8	43·7	614·3	44·2	W
	12	0		11·34	530·8	43·7	611·1	44·2	W
	13	0†	25	09·60	537·4	43·7	582·7	44·2	W
	14	0		12·48	535·9	43·8	589·1	44·3	W
	15	0		12·93	532·1	43·8	595·0	44·4	W
	16	0		14·46	535·1	43·9	596·8	44·4	W
	17	0		13·37	534·6	43·9	599·9	44·4	W
	18	0		12·82	534·2	43·9	601·8	44·4	W
	19	0		13·09	534·5	43·9	602·4	44·5	B
	20	0		13·46	535·7	43·9	602·4	44·5	B
	21	0		13·46	535·4	44·0	602·6	44·5	H
	22	0		13·83	531·6	44·0	605·4	44·5	B
	23	0		15·17	528·2	44·0	604·9	44·6	B
5	0	0		16·30	530·2	44·1	608·2	44·7	B
	1	0		16·35	528·9	44·1	610·8	44·7	B
	2	0		15·86	532·8	44·2	611·0	44·7	H
	3	0		15·58	534·0	44·2	619·4	44·8	H
	4	0		15·07	535·0	44·3	616·5	44·8	H
	5	0		14·60	536·9	44·3	609·7	44·8	B
	6	0		14·11	536·9	44·3	607·8	44·7	W
	7	0		13·90	538·5	44·2	606·3	44·6	W
	8	0		12·22	534·0	44·1	607·3	44·5	W
	9	0		13·83	536·0	44·0	610·3	44·5	W
	10	0		11·21	532·9	44·0	612·1	44·4	W
	11	2		13·05	532·1	44·0	612·6	44·3	H
	12	0		13·77	531·1	43·9	615·3	44·2	H

DECLINATION. Magnet untouched, Oct. 16ᵈ—Nov. 11ᵈ.
BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.

Nov. 4ᵈ 23ʰ + The large copper stove removed from the Observatory; its effect on the balance magnet, to which it was nearest, was found to be zero.

Nov. 4ᵈ—6ᵈ. Observatory being cleaned and washed; iron in the room frequently, but always removed during the observations.

Göttingen Mean Time of Declination Obs.	Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.	Göttingen Mean Time of Declination Obs.	Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°		d. h. m.	° ′	Sc. Div.	°	Mic. Div.	°	
5 13 0	25 13·07	534·0	43·8	613·8	44·1	H	7 21 0	25 12·76	533·4	42·3	614·4	42·5	H
14 0	12·38	530·1	43·8	611·1	44·0	H	22 0	13·36	529·4	42·2	614·9	42·5	H
15 0	15·17	542·4	43·7	598·7	44·0	H	23 0	15·91	527·7	42·2	614·3	42·5	B
16 0	13·25	534·6	43·7	597·0	44·0	H	8 0 0	16·95	527·1	42·2	612·9	42·7	H
17 0	13·67	538·7	43·7	599·1	44·0	H	1 0	18·58	533·3	42·5	611·5	43·1	B
18 0	12·72	537·9	43·7	600·2	44·0	H	2 0	18·28	532·9	42·8	617·1	43·5	B
19 0	13·34	537·8	43·7	602·3	44·0	W	3 0	16·62	532·7	43·1	620·4	43·9	B
20 0	13·39	540·4	43·6	602·9	44·0	W	4 0	14·30	536·5	43·5	617·1	44·2	B
21 0	13·79	539·9	43·6	603·0	43·9	B	5 10	14·17	537·9	43·8	615·3	44·6	H
22 0	14·40	534·6	43·6	604·1	43·9	W	6 0	11·84	539·0	44·0	614·7	44·8	W
23 0	17·39	534·5	43·7	602·9	44·0	W	7 0	12·56	540·3	44·1	611·0	45·0	W
6 0 0	17·83	526·1	43·7	593·9	44·4	W	8 0	12·48	541·3	44·3	606·0	45·2	W
1 0	18·52	533·8	44·0	594·3	44·7	W	9 0	10·80	542·3	44·6	601·8	45·3	W
2 0	18·43	535·6	44·1	595·9	44·7	W	10 0	10·00	539·6	44·7	599·2	45·4	W
3 0	17·68	535·6	44·3	599·7	45·0	W	11 0	11·05	536·7	44·8	598·0	45·5	H
4 0	15·92	540·4	44·6	607·7	45·2	W	12 0	11·54	537·4	44·8	597·0	45·5	H
5 0	16·36	535·1	44·6	626·3	45·2	W							
6 0	14·43	533·5	44·8	634·1	45·4	H	13 0	25 10·98	536·8	45·0	593·6	45·6	H
7 0	14·67	530·6	44·8	656·9	45·5	H	14 0	13·32	534·2	45·0	594·1	45·6	H
8 0	13·93	535·7	44·8	646·9	45·4	H	15 0	14·06	535·9	45·0	594·3	45·7	H
9 0	14·82	535·1	44·7	638·8	45·3	H	16 0	12·98	536·5	45·2	595·2	45·9	H
10 0	13·27	535·3	44·7	633·9	45·3	H	17 0	12·92	537·2	45·2	596·4	46·0	H
11 0	13·05	536·6	44·7	630·7	45·2	B	18 0	12·35	539·2	45·3	595·8	46·0	H
12 0	13·83	535·9	44·7	628·1	45·2	B	19 0	12·76	538·5	45·2	596·2	45·9	W
							20 0	12·42	537·9	45·2	596·0	45·9	W
13 0	25 14·13	535·7	46·7	626·5	45·2	B	21 0	12·22	534·6	45·4	600·3	45·9	B
14 0	14·06	535·7	44·7	624·3	45·2	B	22 0	12·56	530·0	45·5	614·7	46·1	W
15 0	14·20	537·6	44·7	620·2	45·1	B	23 0	14·60	527·3	45·7	617·4	46·3	W
16 0	13·49	536·0	44·7	619·1	45·0	B	9 0 0	16·59	529·7	45·9	616·8	46·6	W
17 0	13·69	537·7	44·6	618·0	45·0	B	1 0	17·81	531·3	46·1	614·6	46·8	W
18 0	13·70	536·6	44·6	618·3	44·9	B	2 2	17·86	534·9	46·5	614·8	47·2	W
19 0	12·75	537·2	44·5	616·6	44·7	H	3 0	16·87	536·9	46·9	617·3	47·7	W
20 0	12·93	537·7	44·4	619·7	44·6	H	4 0	15·34	537·8	47·2	619·3	48·0	W
21 0	12·78	532·9	44·1	623·2	44·4	W	5 0	14·13	539·8	47·6	619·6	48·4	W
22 0	14·67	528·3	44·0	622·4	44·2	H	6 0	13·10	540·5	47·7	616·0	48·4	H
23 0	16·52	528·9	43·9	621·1	44·2	H	7 0	13·17	540·4	47·8	615·0	48·4	H
7 0 0	18·77	530·5	44·0	625·7	44·5	H	8 0	13·16	540·4	47·7	614·7	48·4	H
1 0	19·37	532·3	44·1	624·9	44·7	H	9 0	13·09	540·6	47·7	613·5	48·2	H
2 0	18·13	532·9	44·2	628·3	44·9	W	10 0	12·82	540·0	47·6	613·5	48·1	H
3 0	16·28	535·9	44·4	628·7	45·1	H	11 0	11·95	539·8	47·5	615·5	47·8	B
4 0	14·78	536·2	44·7	627·8	45·3	H	12 0	12·72	536·6	47·3	608·9	47·6	B
5 0	14·43	537·7	44·8	624·9	45·5	H							
6 0	14·31	537·8	44·9	623·0	45·3	B	10 13 0	25 11·30	539·9	44·9	587·1	45·1	W
7 0	13·66	536·4	44·9	623·4	45·3	B	14 0	10·74	538·1	44·9	585·6	45·0	W
8 0	11·15	533·3	44·9	631·6	45·2	B	15 0	11·72	538·6	44·8	586·8	44·9	W
9 0	12·25	533·7	44·8	629·9	45·1	B	16 0	13·99	539·2	44·7	583·0	44·8	W
10 0	11·72	539·1	44·7	629·4	44·9	B	17 0	10·87	543·2	44·6	579·7	44·7	W
11 0	12·87	536·0	44·4	623·2	44·5	W	18 0	11·34	542·6	44·3	582·2	44·5	W
12 0	14·18	534·3	44·1	621·7	44·2	W	19 0	11·69	544·6	44·2	583·9	44·3	B
							20 0	14·37	540·8	44·1	584·7	44·2	B
13 0	25 15·04	535·2	43·9	622·3	43·9	W	21 0	16·12	538·8	44·0	582·7	44·0	H
14 0	14·24	534·8	43·7	622·4	43·6	W	22 0	17·53	536·0	43·8	584·6	43·7	H
15 0	14·64	535·2	43·4	623·1	43·4	W	23 0	18·16	535·4	43·7	586·8	43·7	H
16 0	14·41	536·0	43·1	621·2	43·1	W	11 0 0	21·77	528·2	43·5	606·9	43·7	H
17 0	14·31	536·5	42·9	621·0	42·9	W	1 0	21·90	528·1	43·4	610·8	43·7	H
18 0	13·56	537·1	42·8	619·8	42·7	W	2 0	22·24	542·0	43·4	618·2	43·7	H
19 0	13·47	535·2	42·6	620·5	42·5	B	3 0	19·53	532·3	43·3	618·7	43·7	H
20 0	13·05	535·4	42·4	615·4	42·5	B	4 0	17·74	541·4	43·4	626·3	43·7	B

DECLINATION. Magnet untouched, Oct. 16ᵈ—Nov. 11ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

Nov. 8ᵈ 20ʰ—23ʰ. Workmen engaged laying carpets; it is feared that some one must have brought a hammer near the balance magnet between 21ʰ 0ᵐ and 30ᵐ, as the reading had changed about 13 mic. div.; the time of vibration had also changed since the previous day.

Göttingen Mean Time of Declination Obs. d.	h.	m.	Declination °	′	Bifilar. Corrected. Sc. Div.	Bifilar. Thermometer. °	Balance. Corrected. Mic. Div.	Balance. Thermometer. °	Observer's Initial.
11	5	0†	25	21·54	522·2	43·4	663·1	43·7	B
	6	0†		13·93	532·5	43·3	699·9	43·7	W
	7	0†		18·54	528·4	43·2	683·0	43·6	W
	8	0†		13·29	523·2	43·1	636·5	43·5	W
	9	0†		06·50	531·1	43·0	663·1	43·3	W
	10	0		05·22	524·8	42·8	654·4	42·9	W
	11	0		06·26	522·6	42·6	651·2	42·5	H
	12	0		07·69	531·6	42·2	627·3	42·1	H
	13	0†	25	02·43	534·0	41·9	557·8	41·7	H
	14	0		03·65	525·1	41·7	562·6	41·5	H
	15	0		13·05	524·9	41·5	597·3	41·4	H
	16	0		13·81	531·6	41·3	606·9	41·3	H
	17	0		12·85	531·0	41·0	612·9	41·2	H
	18	0		14·99	529·1	41·0	614·6	41·2	H
	19	0		15·54	534·4	40·9	614·8	41·1	W
	20	0		14·73	533·5	40·9	614·9	41·0	W
	21	0		15·04	533·1	40·9	613·5	41·0	B
	22	0		15·47	529·6	40·8	613·5	41·0	W
	23	0		16·82	530·2	40·8	613·1	41·0	W
12	0	0		16·68	533·7	40·9	618·2	41·2	W
	1	0		17·80	535·4	41·0	622·9	41·5	W
	2	0		16·01	532·1	41·2	626·7	41·8	W
	3	0		16·76	536·0	41·5	628·3	42·0	W
	4	0		21·03	528·0	41·7	647·4	42·2	W
	5	0†		08·22	521·1	41·8	718·2	42·5	W
	6	0†		18·14	535·8	41·9	670·1	42·7	H
	7	0		15·52	538·5	42·0	642·4	42·7	H
	8	0		15·59	532·4	42·0	640·4	42·7	H
	9	0		14·70	533·0	42·0	638·1	42·6	H
	10	0		13·93	532·3	42·0	632·3	42·5	H
	11	0		12·06	534·3	41·9	628·1	42·4	B
	12	0		09·26	530·4	41·8	624·2	42·2	B
	13	0†	25	12·13	535·8	41·7	606·0	42·2	B
	14	0		13·77	530·7	41·7	616·1	42·2	B
	15	0		13·00	534·0	41·7	617·3	42·3	B
	16	0		15·59	534·9	41·8	618·4	42·3	B
	17	0		16·06	537·2	41·8	615·5	42·4	B
	18	0		13·72	534·2	41·9	614·1	42·5	B
	19	0		15·01	538·3	41·9	615·7	42·6	H
	20	0		16·57	535·6	42·0	614·2	42·6	H
	21	0		16·75	534·9	42·0	612·7	42·6	W
	22	0		15·05	528·5	42·0	619·1	42·6	H
	23	0		15·94	531·0	42·1	619·7	42·6	H
13	0	0		16·87	533·0	42·1	617·9	42·6	H
	1	0		19·51	535·4	42·1	622 6	42·6	H
	2	0		18·01	528·7	42·1	628·5	42·7	H
	3	0		17·46	533·9	42·2	628·8	42·9	H
	4	0		16·15	533·9	42·3	629·6	43·1	H
	5	0		15·72	535·2	42·4	627·9	43·2	H
	6	0		14·57	538·0	42·4	623·7	43·0	B
	7	0		14·85	532·3	42·5	625·5	43·0	B
	8	0		08·75	532·4	42·6	622·8	43·1	B
	9	0		12·43	535·5	42·7	621·9	43·3	B
	10	0		10·47	532·2	42·8	621·7	43·5	B
	11	0		11·51	530·6	43·0	610·6	43·7	W
	12	0		10·77	527·3	43·1	596·4	43·9	W
13	13	0	25	08·18	526·7	43·2	573·4	44·0	W
	14	0		11·99	528·8	43·3	586·8	44·1	W
	15	0		13·05	528·3	43·5	603·9	44·2	W
	16	0		10·78	532·7	43·6	604·6	44·3	W
	17	0		12·95	535·7	43·7	605·9	44·3	W
	18	0		14·44	540·1	43·7	604·2	44·3	W
	19	0		14·48	541·7	43·7	603·1	44·1	B
	20	0		17·84	531·8	43·6	606·9	44·0	B
	21	0		15·44	540·6	43·6	607·7	44·0	H
	22	0		15·27	538·6	43·4	605·7	43·8	H
	23	0		15·17	536·1	43·3	606·1	43·7	B
14	0	0		17·13	536·6	43·3	608·9	43·8	B
	1	0		20·35	539·0	43·3	611·6	43·9	H
	2	0		18·50	537·3	43·4	616·9	44·1	H
	3	0		16·63	535·7	43·6	620·3	44·3	H
	4	0		15·41	533·9	43·8	619·9	44·5	H
	5	0		14·53	536·0	43·9	622·7	44·5	B
	6	0		15·07	538·7	44·0	624·6	44·5	W
	7	0		14·17	531·2	44·0	631·5	44·6	W
	8	0		14·46	536·3	44·0	624·3	44·5	W
	9	0		14·10	537·4	44·0	619·5	44·5	W
	10	0		13·91	537·3	43·9	615·2	44·3	W
	11	0		13·49	536·0	43·7	614·6	44·0	H
	12	0		13·67	535·4	43·5	615·4	43·7	H
	13	0	25	13·86	535·5	43·2	616·0	43·5	H
	14	0		14·01	536·0	43·0	615·6	43·2	H
	15	0		14·13	535·9	42·9	617·5	43·1	H
	16	0		14·37	536·2	42·8	616·0	43·0	H
	17	0		14·70	537·2	42·8	616·6	43·0	H
	18	0		15·01	539·1	42·8	614·2	43·2	H
	19	0		13·76	543·4	42·8	610·0	43·4	W
	20	0		13·43	540·9	42·9	609·5	43·6	W
	21	0		13·97	538·1	43·2	612·9	44·0	B
	22	0		13·96	533·9	43·7	617·0	44·6	W
	23	0		15·51	531·3	44·2	615·2	45·3	W
15	0	0		16·32	532·4	45·0	616·0	46·0	W
	1	0		17·73	535·9	45·6	612·0	46·5	W
	2	0		17·89	537·2	46·0	611·8	47·0	W
	3	0		16·55	536·1	46·6	620·3	47·5	W
	4	0		15·76	535·9	47·0	627·5	47·9	W
	5	0		15·91	539·4	47·3	621·8	48·1	W
	6	0		15·99	540·5	47·6	619·8	48·3	H
	7	0		15·22	541·1	47·7	619·0	48·3	H
	8	0		14·65	538·2	47·7	620·3	48·4	H
	9	0		14·38	538·0	47·8	625·4	48·5	H
	10	0		13·09	537·8	47·9	625·5	48·5	H
	11	0		13·16	537·8	47·9	621·6	48·5	B
	12	0		11·86	540·3	47·9	612·3	48·5	B
	13	0	25	11·77	539·0	47·9	607·0	48·5	B
	14	0		10·50	537·4	47·9	603·7	48·5	B
	15	0†		08·45	533·0	48·0	601·7	48·5	B
	16	0		14·48	541·3	48·0	602·2	48·5	B
	17	0		14·11	541·1	48·0	601·9	48·5	B
	18	0		13·50	545·9	48·1	599·2	48·6	B
	19	0		11·39	546·6	48·2	595·7	48·7	H
	20	0		15·05	542·0	48·3	596·5	48·9	H

DECLINATION. Torsion removed, Nov. 11^{d} 23^{h}, + 8½°. Effect of + 10° of Torsion = − 0′·84.

BIFILAR. Observed 2^{m} after the Declination, k=0·000140. BALANCE. Observed 3^{m} after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
15	21	2†	25	21·46	519·6	48·4	613·3	49·0	W
	22	0†		29·41	540·5	48·5	578·2	49·1	H
	23	0†		21·43	521·8	48·7	596·8	49·2	W
16	0	0†		30·60	523·6	48·8	619·3	49·4	H
	1	0†		37·50	548·0	49·1	798·1	49·7	H
	2	0†		28·47	521·4	49·5	780·3	50·2	H
	3	0†		22·94	535·4	49·8	760·6	50·5	H
	4	0†		22·10	543·3	50·2	971·2	50·7	B
	5	0†		08·28	533·2	50·3	1059·1	51·2	H
	6	0†	25	14·57	590·6	50·6	1112·4	51·7	B
	7	0†	24	33·70	518·1	50·8	697·5	52·0	B
	8	0†	24	59·03	531·9	51·0	774·2	52·1	B
	9	0†	24	40·91	535·1	51·2	599·4	52·3	B
	10	0†	25	00·53	510·3	51·3	505·6	52·3	B
	11	0†		02·69	490·6	51·3	496·4	52·3	B
	12	0†		11·28	502·1	51·3	456·4	52·5	B
17	13	0	25	10·68	528·6	51·1	581·4	50·8	H
	14	0		16·21	529·9	50·9	599·5	50·7	H
	15	0		15·71	528·8	50·7	611·9	50·7	H
	16	0		13·56	529·8	50·6	623·3	50·5	H
	17	0		12·72	531·6	50·5	621·4	50·4	H
	18	0		16·08	533·4	50·3	621·3	50·3	H
	19	3		16·21	523·1	50·2	632·2	50·2	W
	20	0		15·76	531·1	50·1	632·7	50·2	W
	21	0		15·01	530·8	50·1	635·4	50·2	B
	22	0		16·48	528·8	50·1	635·7	50·2	W
	23	0		19·58	521·2	50·1	643·6	50·4	W
18	0	0†		17·76	516·0	50·2	655·7	50·5	W
	1	0		19·44	534·5	50·3	648·7	50·5	W
	2	0		19·28	536·1	50·5	646·2	50·6	W
	3	0		16·80	536·5	50·6	644·3	50·7	W
	4	0		15·58	532·3	50·6	643·6	50·7	W
	5	0		16·62	534·2	50·6	647·0	50·8	W
	6	0		15·24	534·0	50·6	641·6	50·7	H
	7	0		16·18	532·3	50·5	648·6	50·6	H
	8	0†	25	06·39	545·7	50·4	631·7	50·6	H
	9	0†	24	59·46	531·9	50·4	623·6	50·7	H
	10	0†	25	02·53	536·5	50·5	593·9	50·9	H
	11	0†		09·12	521·3	50·7	600·6	51·1	B
	12	0		12·78	530·4	50·7	607·5	51·2	B
	13	0	25	13·10	528·1	50·8	609·9	51·1	B
	14	0		15·07	529·7	50·8	606·5	51·0	B
	15	0†		15·83	525·3	50·8	613·1	51·0	B
	16	0†		19·15	528·8	50·9	565·7	51·1	B
	17	0		15·07	526·6	50·9	570·8	51·2	B
	18	0		11·00	529·4	50·9	592·5	51·2	B
	19	0		14·73	528·6	50·9	607·1	51·2	H
	20	0		16·86	535·8	51·0	614·0	51·2	H
	21	0		17·84	532·8	51·0	618·3	51·2	W
	22	0		15·38	522·1	51·0	627·8	51·2	H
	23	0		18·63	521·2	51·1	632·0	51·2	H
19	0	0		20·05	514·5	51·1	649·2	51·3	H
	1	0		19·01	517·6	51·1	648·7	51·4	H
	2	0		18·48	522·7	51·3	657·3	51·6	H
	3	0		17·00	531·4	51·5	673·1	51·9	H
	4	0		12·29	525·2	51·7	687·6	52·1	H

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
19	5	0	25	14·53	531·4	51·8	668·0	52·1	H
	6	0		13·46	532·0	51·8	650·9	52·0	B
	7	0†		05·72	543·1	51·8	645·0	52·0	B
	8	0		11·77	532·0	51·8	641·9	52·0	B
	9	0		11·96	531·7	51·7	643·8	51·8	B
	10	0		13·05	530·0	51·5	626·4	51·5	B
	11	0		09·86	530·6	51·3	621·0	51·4	W
	12	0		13·88	530·0	51·1	621·3	51·3	W
	13	0	25	14·43	532·5	51·0	616·0	51·1	W
	14	0		14·96	533·2	50·9	618·1	51·0	W
	15	0		15·27	533·4	50·9	617·5	51·0	W
	16	0		15·74	533·7	50·9	617·8	51·0	W
	17	0		14·60	536·7	50·9	618·2	50·9	W
	18	0		13·69	538·8	50·9	616·9	50·9	W
	19	2		13·57	534·7	50·8	620·2	50·8	B
	20	0		14·23	534·3	50·8	621·1	50·9	B
	21	0		14·51	532·8	50·8	621·0	50·9	H
	22	0		15·49	530·7	50·8	621·3	50·9	H
	23	0		17·80	527·2	50·9	624·0	51·1	B
20	0	3		18·37	525·5	51·0	631·4	51·4	H
	1	0		18·48	528·6	51·2	630·9	51·7	H
	2	0		17·15	531·9	51·5	634·9	52·1	H
	3	0		17·15	535·0	51·8	632·9	52·3	H
	4	0		15·74	533·0	51·9	631·9	52·4	H
	5	0		14·53	535·3	51·9	630·5	52·1	H
	6	0		11·88	535·0	51·8	626·0	51·8	W
	7	0		13·99	536·2	51·4	622·5	51·4	W
	8	0		13·76	536·9	51·0	623·2	50·9	W
	9	0†		09·76	527·4	50·8	641·2	50·4	W
	10	0		10·36	529·1	50·4	642·6	50·0	W
	11	0		11·91	530·6	50·0	635·9	49·6	H
	12	0		13·72	530·0	49·7	633·9	49·2	H
	13	0	25	14·77	530·8	49·2	621·5	48·7	H
	14	0		13·94	529·8	48·8	614·9	48·2	H
	15	0		15·14	532·7	48·5	612·7	47·7	H
	16	0		15·11	532·5	48·0	612·9	47·3	H
	17	0		14·13	535·8	47·7	611·5	47·0	H
	18	0		14·92	534·1	47·3	612·4	46·5	H
	19	0		15·22	535·0	46·9	611·1	46·0	W
	20	0		14·20	529·7	46·4	614·5	45·5	W
	21	0		14·82	533·1	46·0	612·2	45·0	B
	22	0		15·04	529·5	45·7	617·2	44·7	W
	23	0		15·64	529·8	45·3	616·0	44·5	W
21	0	0		17·49	530·2	45·0	618·2	44·5	W
	1	0		18·50	530·1	45·0	617·3	44·7	W
	2	0		18·52	533·7	45·0	622·9	45·0	W
	3	0		16·46	528·8	45·2	628·5	45·5	W
	4	0		15·62	534·1	45·6	632·7	46·1	W
	5	0		15·11	535·7	46·0	626·5	46·5	W
	6	0		15·39	535·9	46·4	622·2	46·6	H
	7	0		14·24	536·8	46·3	618·0	46·5	W
	8	0		14·50	534·4	46·2	619·0	46·3	W
	9	0		13·81	533·8	46·0	619·5	46·0	W
	10	0		12·87	533·6	45·8	617·1	45·5	W
	11	0		13·14	541·6	45·5	607·1	45·0	B
	12	0		13·46	533·3	45·0	608·8	44·5	B

DECLINATION. Magnet untouched, Nov. 11d—Dec. 25d.

BIFILAR. Observed 2m after the Declination $k = 0{\cdot}000140$. BALANCE. Observed 3m after the Declination, $k = 0{\cdot}0000085$.

† Extra Observations made.

Nov. 16d 10h. Only one reading of the declination was recorded; the arc of vibration at the time being less than 3′, the error cannot be more than 1′·5.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
21	13	0	25	12·70	531·1	44·6	611·0	44·0	B
	14	0		13·46	532·2	44·2	607·4	43·5	B
	15	0†		22·20	538·1	43·8	592·1	43·0	B
	16	0		10·41	537·9	43·3	575·9	42·5	B
	17	0		13·30	538·2	42·8	578·9	42·0	B
	18	0		13·37	538·6	42·3	584·9	41·4	B
	19	0		13·22	541·0	41·8	586·7	40·8	W
	20	0		16·95	535·6	41·3	590·5	40·3	W
	21	0		19·34	537·0	40·8	580·6	39·7	H
	22	0		19·15	517·3	40·3	598·1	39·3	W
	23	0		27·61	507·3	40·0	612·8	39·0	H
22	0	0†		26·28	526·5	39·7	610·8	38·8	H
	1	0†		22·80	534·1	39·4	624·0	38·7	H
	2	0		22·74	534·9	39·2	625·8	38·7	H
	3	0		20·50	531·0	39·1	628·1	38·7	H
	4	0		20·03	527·0	39·0	633·9	38·8	H
	5	0†		15·32	514·1	39·0	671·4	38·9	W
	6	0†		20·08	526·4	39·0	692·2	39·0	H
	7	0†	25	00·78	566·2	39·0	986·3	39·2	B
	8	0†	24	48·97	494·2	30·0	774·2	39·5	B
	9	0†	25	06·04	519·5	39·0	637·2	39·6	B
	10	0†	25	13·76	510·8	39·1	626·2	39·8	H
	11	0†	25	19·21	529·4	39·0	452·8	39·8	W
	12	0†	24	45·78	526·0	39·0	419·5	39·6	W
	13	0†	24	56·40	496·8	39·0	423·9	39·6	W
	14	0†	25	03·63	518·1	39·0	413·0	39·8	W
	15	0		11·37	506·2	39·0	468·0	39·8	W
	16	0		17·15	523·8	39·0	538·6	39·9	W
	17	0		12·58	533·8	39·0	548·8	39·9	W
	18	0†		26·50	499·1	39·0	553·3	39·7	W
	19	0†		19·55	533·7	39·1	558·7	39·8	B
	20	0		19·55	537·5	39·2	587·2	40·0	B
	21	0		18·50	524·9	39·2	604·9	40·0	H
	22	0		16·18	517·7	39·2	628·0	39·8	H
	23	0		15·81	526·4	39·2	628·0	39·7	B
23	0	0		18·99	512·3	39·2	645·3	39·8	B
	1	0		16·08	526·9	39·3	650·7	40·0	B
	2	0		19·53	530·1	39·5	648·0	40·2	H
	3	0		20·15	528·0	39·7	651·2	40·5	H
	4	0		16·13	534·7	39·9	649·0	40·5	B
	5	0		17·46	529·2	39·9	660·3	40·7	B
	6	0	25	13·63	532·9	40·0	658·2	40·9	W
	7	0†	24	39·14	539·6	40·1	668·5	41·0	W
	8	0†	25	12·31	524·3	40·3	628·5	41·3	W
	9	0†		12·11	525·2	40·7	641·8	41·7	H
	10	0		10·70	526·9	40·9	639·9	41·9	W
	11	0		13·96	531·6	41·0	622·7	41·8	H
	12	0		13·72	529·6	41·0	613·6	41·7	H
24	13	0	25	11·51	529·1	37·9	580·8	37·5	B
	14	0		14·67	532·0	37·7	596·5	37·2	B
	15	0		14·38	532·5	37·3	599·8	36·8	B
	16	0		20·22	529·8	36·9	601·7	36·5	B
	17	0		14·20	535·0	36·6	590·4	36·1	B
	18	0		15·42	536·9	36·3	595·3	35·8	B
	19	0		14·62	538·0	36·0	597·3	35·6	H
	20	0		14·98	534·5	35·7	600·4	35·4	H

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
24	21	0	25	15·74	534·1	35·5	601·7	35·3	W
	22	0		15·52	531·7	35·3	601·9	35·1	H
	23	0		16·15	531·7	35·2	599·3	35·0	H
25	0	0		16·46	527·8	35·1	604·4	35·0	H
	1	0		18·48	530·1	35·1	606·3	35·2	H
	2	0		18·34	535·5	35·3	604·7	35·8	H
	3	0		18·43	538·6	35·7	611·2	36·4	H
	4	0		16·82	533·6	36·0	619·9	36·7	H
	5	0		13·32	541·5	36·4	621·3	37·0	H
	6	0		15·04	529·2	36·7	619·9	37·2	B
	7	0		10·90	536·3	36·8	622·6	37·3	B
	8	0		13·72	537·9	36·8	614·8	37·3	B
	9	0		14·11	534·4	36·8	612·7	37·2	B
	10	0		13·27	535·5	36·8	611·5	37·2	B
	11	0		12·51	537·3	36·7	606·0	37·0	W
	12	0		12·98	536·4	36·7	605·2	36·9	W
	13	0	25	12·78	532·9	36·5	604·4	36·8	W
	14	0		14·04	535·8	36·3	602·8	36·6	W
	15	0		12·75	534·2	36·1	603·4	36·5	W
	16	0		14·71	533·8	36·0	602·8	36·3	W
	17	0		16·39	533·3	35·9	601·4	36·1	W
	18	0		14·18	536·9	35·8	600·4	35·9	W
	19	0		14·37	536·3	35·7	603·6	35·8	B
	20	0		14·55	535·4	35·6	604·5	35·7	B
	21	0		13·79	536·2	35·5	605·3	35·6	H
	22	0		13·91	532·8	35·3	604·2	35·4	H
	23	0		14·70	531·1	35·2	605·2	35·4	H
26	0	0		16·73	531·5	35·2	609·6	35·5	B
	1	0		17·02	533·2	35·3	610·2	35·8	H
	2	0		16·63	536·5	35·5	610·9	36·2	H
	3	0		16·38	538·0	35·8	611·5	36·6	H
	4	0		15·47	539·2	36·2	613·9	37·0	H
	5	0		14·87	538·6	36·6	615·5	37·5	H
	6	0		14·71	537·4	37·0	614·0	37·9	W
	7	0		14·43	538·8	37·3	610·8	38·2	W
	8	0		14·43	537·4	37·6	609·0	38·5	W
	9	0		13·41	538·0	37·8	607·3	38·6	W
	10	0		13·90	537·5	38·0	606·4	38·9	W
	11	0		13·81	536·4	38·3	609·8	39·3	H
	12	0		13·66	537·3	38·7	609·7	39·7	H
	13	0	25	12·69	534·8	39·0	611·1	40·1	H
	14	0		14·43	534·6	39·3	609·7	40·5	H
	15	0		15·20	535·1	39·7	608·6	40·9	H
	16	0		14·73	536·4	40·0	608·9	41·2	H
	17	0		14·94	537·7	40·4	607·8	41·6	H
	18	0		14·73	540·7	40·8	606·1	41·9	H
	19	0		15·14	540·4	41·1	605·3	42·3	W
	20	0		14·51	542·7	41·5	601·3	42·5	W
	21	0		14·67	540·2	41·9	604·4	42·9	W
	22	0		14·82	536·9	42·1	603·8	43·2	W
	23	0		15·86	535·0	42·4	600·4	43·5	W
27	0	0		17·76	533·0	42·8	604·1	43·8	W
	1	0		18·67	532·5	43·0	610·2	44·1	W
	2	0		19·08	538·1	43·4	609·7	44·4	W
	3	0		17·94	540·0	43·8	611·8	44·7	W
	4	0		16·36	541·4	44·0	613·6	45·0	W

DECLINATION. Magnet untouched, Nov. 11d—Dec. 25d.

BIFILAR. Observed 2m after the Declination, $k = 0{\cdot}000140$. BALANCE. Observed 3m after the Declination $k = 0{\cdot}0000085$.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
27	5	0	25	15·52	540·8	44·2	615·7	45·2	W
	6	0		14·53	541·0	44·5	613·6	45·5	H
	7	0		13·86	541·7	44·8	610·6	45·7	H
	8	0		13·72	541·8	45·1	606·8	46·0	H
	9	0		13·05	542·1	45·3	605·3	46·2	H
	10	0		12·95	540·8	45·5	605·6	46·4	H
	11	0†		05·85	544·9	45·7	601·1	46·5	W
	12	0		08·58	532·2	45·9	609·2	46·8	W
	13	0	25	12·22	532·1	46·0	565·1	46·9	W
	14	0		08·01	531·4	46·1	572·5	46·9	W
	15	0		11·34	534·4	46·1	584·9	46·9	W
	16	0		11·24	534·9	46·1	591·2	46·8	W
	17	0		08·90	535·5	46·1	583·9	46·7	W
	18	0		07·17	547·9	46·1	576·8	46·7	W
	19	0		13·09	541·7	46·1	576·9	46·7	H
	20	0		16·36	547·4	46·1	570·0	46·6	H
	21	0		18·40	553·0	46·0	568·5	46·5	H
	22	0		17·73	542·0	45·9	575·2	46·4	H
	23	0		19·55	527·0	45·8	585·9	46·2	H
28	0	0		22·10	535·8	45·8	591·9	46·2	H
	1	0		23·58	535·6	45·8	600·6	46·2	H
	2	0		25·93	530·2	45·8	617·6	46·2	H
	3	0		25·63	527·6	45·8	637·4	46·3	H
	4	0		21·97	532·1	45·8	654·7	46·3	H
	5	0		20·00	525·5	45·9	692·2	46·3	H
	6	0		16·03	532·9	46·0	674·7	46·4	W
	7	0		14·64	535·8	46·0	659·6	46·5	W
	8	0		14·70	539·0	46·1	638·2	46·6	W
	9	0		14·15	539·4	46·1	625·8	46·7	W
	10	0		13·23	538·1	46·2	618·7	46·6	W
	11	0		12·73	532·1	46·3	619·7	46·7	H
	12	0		12·06	537·3	46·3	615·1	46·7	H
	13	0	25	13·05	540·7	46·3	605·7	46·6	H
	14	0		13·74	539·1	46·3	601·2	46·6	H
	15	0		21·10	533·1	46·3	605·4	46·5	H
	16	0		12·53	538·1	46·2	589·1	46·5	H
	17	0		13·86	532·9	46·0	599·7	46·5	H
	18	0		14·67	538·0	46·0	597·0	46·5	H
	19	0		08·14	545·0	46·0	588·9	46·4	W
	20	0		14·60	536·7	46·0	595·9	46·3	W
	21	0		14·58	541·9	45·9	592·7	46·1	W
	22	0		13·81	531·8	45·8	599·7	46·0	W
	23	0		15·67	532·9	45·8	600·3	45·9	W
29	0	0		16·28	531·6	45·7	604·4	45·8	W
	1	0		17·58	533·8	45·7	608·0	45·8	W
	2	0		17·46	535·8	45·6	610·5	45·8	W
	3	0		17·71	537·6	45·7	617·1	45·8	W
	4	0		18·41	536·6	45·7	620·9	45·9	W
	5	0		20·45	536·9	45·7	624·0	45·9	W
	6	0		18·20	536·3	45·6	627·1	45·8	H
	7	0		15·32	537·3	45·6	624·7	45·8	H
	8	0		14·57	538·1	45·5	620·9	45·7	H
	9	0		12·15	537·1	45·4	617·5	45·5	H
	10	0		10·92	535·7	45·2	617·6	45·2	W
	11	0		12·83	539·5	45·0	613·3	45·2	W
	12	0		13·86	534·4	45·0	610·2	45·2	W

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
29	13	0	25	14·10	536·6	44·9	610·9	45·1	D
	14	0		15·85	537·1	44·7	604·3	44·8	D
	15	0		15·25	534·3	44·5	607·1	44·6	D
	16	0		14·98	535·8	44·2	611·1	44·4	D
	17	0		15·01	537·2	44·0	613·0	44·2	D
	18	0		15·01	537·0	43·9	615·4	44·2	H
	19	0		14·33	538·0	43·9	615·2	44·2	H
	20	0		14·23	537·8	43·7	615·2	44·1	H
	21	0		14·20	536·2	43·5	616·0	44·0	H
	22	0		14·46	534·0	43·3	613·5	43·7	W
	23	0		15·32	532·7	43·1	610·6	43·3	W
30	0	0		16·45	534·0	43·0	610·7	43·1	C
	1	0		17·31	534·6	42·9	609·4	43·1	C
	2	0		17·65	535·6	42·9	610·6	43·2	C
	3	0		16·05	536·4	42·9	614·2	43·2	H
	4	0		15·62	537·6	42·8	617·2	43·4	C
	5	0		14·43	540·2	42·9	617·1	43·5	C
	6	0		14·64	540·5	43·0	610·4	43·7	D
	7	0		14·40	540·0	43·2	609·2	44·0	D
	8	0		14·08	537·8	43·2	608·1	44·2	H
	9	0		13·76	539·1	43·3	607·0	44·2	W
	10	0		13·09	539·1	43·3	606·7	44·2	W
	11	0		14·57	538·9	43·3	605·0	44·0	W
	12	0		13·46	536·3	43·2	603·0	43·7	W
1	13	0	25	13·12	536·0	40·7	611·0	40·8	H
	14	0		14·82	537·2	40·7	610·9	40·8	H
	15	0		14·50	538·0	40·6	610·7	40·8	H
	16	0		13·12	537·4	40·4	608·4	40·8	H
	17	0		13·79	538·4	40·3	607·3	40·7	H
	18	0		14·37	539·3	40·3	606·4	40·6	H
	19	0		14·01	539·7	40·2	603·1	40·5	W
	20	0		13·57	539·9	40·1	602·3	40·4	W
	21	0		14·53	537·6	40·0	603·9	40·1	B
	22	0		14·33	536·6	39·9	606·1	40·0	W
	23	0		15·27	535·2	39·8	606·6	40·0	W
2	0	0		16·23	533·2	39·7	605·1	40·0	W
	1	0		18·30	537·1	39·7	609·7	39·9	W
	2	0		17·49	540·9	39·7	609·9	39·9	W
	3	0		17·00	541·3	39·7	610·3	39·9	W
	4	0		15·52	543·5	39·7	609·3	39·9	W
	5	0		13·49	533·5	39·7	615·9	40·0	H
	6	0†		06·23	540·9	39·7	618·3	40·0	W
	7	0		14·17	542·9	39·7	615·9	40·2	H
	8	0		14·78	541·1	39·7	615·5	40·2	H
	9	0		13·72	542·4	39·7	612·8	40·1	H
	10	0		14·03	541·1	39·7	609·2	40·0	H
	11	0		13·52	538·7	39·6	607·9	39·9	B
	12	0		12·43	538·8	39·5	604·5	39·8	B
	13	0	25	13·02	537·6	39·4	602·4	39·8	B
	14	0		14·71	535·3	39·4	599·3	39·7	B
	15	0		12·78	534·1	39·3	597·5	39·6	B
	16	0		15·61	535·9	39·2	598·0	39·5	B
	17	0		13·83	538·3	39·1	602·7	39·5	B
	18	0		13·19	540·8	39·0	603·8	39·4	B
	19	0		13·66	542·7	39·0	604·6	39·4	H
	20	0		13·96	541·6	39·0	605·3	39·4	H

DECLINATION. Magnet untouched, Nov. 11ᵈ—Dec. 25ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			DECLINATION.		BIFILAR.		BALANCE.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
2	21	0	25	14.17	536.7	38.9	607.8	39.3	W
	22	0		13.19	536.3	38.8	608.1	39.2	H
	23	0		14.33	532.7	38.8	610.2	39.2	H
3	0	0		16.63	531.1	38.8	610.0	39.2	H
	1	0		16.82	532.7	38.8	607.3	39.2	H
	2	0		17.15	536.6	38.8	606.8	39.3	H
	3	0		16.38	538.8	38.9	607.4	39.3	H
	4	0		14.75	540.9	39.0	610.7	39.4	H
	5	0		14.67	541.9	39.0	609.5	39.5	H
	6	0		14.46	542.3	38.9	607.9	39.5	B
	7	0		14.53	541.0	38.9	607.4	39.5	B
	8	0		14.03	540.6	38.9	607.7	39.4	B
	9	0		14.50	540.9	38.9	607.0	39.3	W
	10	3		13.76	539.8	38.9	605.5	39.1	B
	11	0		12.73	540.1	38.8	604.9	39.0	W
	12	0		12.62	536.5	38.7	605.7	38.9	W
	13	0	25	11.64	537.6	38.5	603.8	38.7	W
	14	0		13.59	536.3	38.3	602.3	38.5	W
	15	0		14.24	536.7	38.1	604.1	38.3	W
	16	0		13.39	535.0	38.0	603.7	38.0	W
	17	0		14.89	537.9	37.8	603.9	37.8	W
	18	0		14.46	539.6	37.6	604.6	37.5	W
	19	0		13.84	539.1	37.4	606.6	37.2	B
	20	0		14.23	540.3	37.1	607.7	37.0	B
	21	0		13.83	538.9	36.9	608.4	36.9	H
	22	0		14.37	535.5	36.8	611.3	36.7	H
	23	0		15.71	543.4	36.7	604.4	36.7	B
4	0	0		18.90	546.0	36.7	603.4	36.7	H
	1	0		21.59	547.4	36.5	599.6	36.9	H
	2	0		25.31	531.4	36.7	605.1	37.0	B
	3	0		17.63	542.7	36.8	603.5	37.4	H
	4	0		21.34	547.5	37.2	598.2	37.7	H
	5	0		20.65	544.3	37.3	601.7	37.9	H
	6	0		17.26	540.4	37.4	609.7	37.9	W
	7	0		17.04	543.9	37.4	608.2	37.8	W
	8	0†		17.49	528.1	37.3	651.1	37.6	W
	9	0		14.80	540.0	37.1	635.6	37.5	W
	10	0		12.78	531.2	37.0	624.0	37.2	W
	11	0†		02.55	538.7	36.8	609.3	36.9	H
	12	0†		06.34	523.9	36.7	598.9	36.7	H
	13	0	25	10.94	534.9	36.4	576.6	36.4	H
	14	0		11.35	532.2	36.0	582.2	36.1	H
	15	0		11.00	543.9	35.9	558.5	35.9	H
	16	0		16.55	539.1	35.7	555.1	35.6	H
	17	0		11.27	539.0	35.4	559.0	35.4	H
	18	0		11.79	535.5	35.2	570.3	35.1	H
	19	0		13.05	538.0	34.9	577.9	34.7	W
	20	0		12.55	534.6	34.6	585.5	34.4	W
	21	0		13.77	535.6	34.3	589.2	33.8	B
	22	0		13.67	527.4	33.9	594.0	33.4	W
	23	0		15.59	531.4	33.6	593.9	33.1	W
5	0	0		17.44	532.3	33.4	594.3	33.0	W
	1	0		17.93	534.1	33.3	595.6	33.2	W
	2	0		17.81	535.5	33.3	597.8	33.4	W
	3	0		16.59	537.2	33.3	601.7	33.6	W
	4	0		16.05	540.6	33.5	602.4	33.7	W
5	5	0	25	15.54	540.0	33.6	602.2	33.9	W
	6	0		15.86	540.2	33.6	601.1	33.9	H
	7	0		15.61	540.0	33.5	600.0	33.7	W
	8	0		14.98	538.2	33.3	592.5	33.5	W
	9	0		07.89	537.2	33.1	607.3	33.1	W
	10	0		13.16	535.1	32.9	604.9	32.8	H
	11	0		14.06	535.6	32.7	607.3	32.5	B
	12	0		13.86	536.3	32.4	603.0	32.2	B
	13	0	25	13.69	535.6	32.1	599.5	31.8	B
	14	0		14.23	537.0	31.8	599.0	31.4	B
	15	0		13.79	536.5	31.5	597.1	31.0	B
	16	0		13.12	535.8	31.1	596.1	30.5	B
	17	0		13.79	537.2	30.8	595.3	30.1	B
	18	13		14.10	537.2	30.3	595.9	29.6	B
	19	0		14.08	537.2	30.0	595.6	29.3	H
	20	0		13.72	537.2	29.7	597.3	29.0	H
	21	0		13.86	535.6	29.3	599.4	28.6	W
	22	0		12.96	535.1	28.9	599.9	28.2	H
	23	0		13.99	533.8	28.7	597.2	28.0	H
6	0	0		15.12	532.9	28.5	598.0	28.0	H
	1	0		16.45	533.1	28.4	597.7	28.0	H
	2	0		17.46	538.3	28.4	599.0	28.2	H
	3	0		17.49	542.4	28.5	601.6	28.5	H
	4	0		15.56	529.6	28.8	601.9	28.9	H
	5	0		15.67	541.9	29.2	598.9	29.5	H
	6	0		16.46	541.2	29.4	603.2	30.0	B
	7	0		15.39	535.1	29.5	605.6	30.0	B
	8	0		14.84	540.7	29.5	603.6	29.8	B
	9	0		14.35	540.5	29.4	602.8	29.6	B
	10	0		13.36	538.3	29.2	603.6	29.2	B
	11	0		12.78	542.3	29.0	602.8	29.0	W
	12	0		13.43	541.6	28.8	600.8	28.8	W
	13	0	25	14.01	538.8	28.6	599.7	28.5	W
	14	0		14.20	538.8	28.5	597.6	28.3	W
	15	0		14.55	538.3	28.3	596.4	28.1	W
	16	0		14.62	539.3	28.1	596.0	27.9	W
	17	0		14.38	539.5	27.9	594.7	27.7	W
	18	0		14.04	539.2	27.7	594.4	27.4	W
	19	0		14.10	539.9	27.5	594.1	27.2	B
	20	0		13.86	538.3	27.2	595.4	26.9	B
	21	0		13.41	536.9	26.9	597.6	26.6	H
	22	0		13.52	534.5	26.6	597.4	26.3	H
	23	0		14.64	534.7	26.3	595.5	26.0	H
7	0	0		15.52	535.6	26.2	596 0	26.0	H
	1	0		17.34	535.0	26.1	594.8	26.2	H
	2	0		17.76	539.4	26.1	597.5	26.5	H
	3	0		16.99	540.6	26.3	600.8	27.2	B
	4	0		15.54	541.6	26.8	600.7	27.8	H
	5	0		14.80	541.6	27.1	598.6	28.0	B
	6	0		14.46	541.9	27.5	597.7	28.3	W
	7	0		14.20	541.6	27.7	597.8	28.4	W
	8	0		14.08	540.7	27.8	596.6	28.5	W
	9	0		13.93	540.5	28.0	598.1	28.7	W
	10	0		13.96	538.2	28.1	601.0	28.9	W
	11	0		11.84	534.4	28.3	608.7	29.3	H
	12	0		13.86	537.0	28.6	605.9	29.6	H

DECLINATION. Magnet untouched, Nov. 11ᵈ—Dec. 25ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
8	13	0	25	14·23	539·7	29·0	599·5	29·8	B
	14	0		14·38	540·0	29·2	597·3	29·9	B
	15	0		14·54	539·5	29·4	596·1	30·1	B
	16	0		14·60	540·2	29·6	594·5	30·3	B
	17	0		14·23	540·1	29·7	591·9	30·4	B
	18	0		14·24	540·3	29·8	590·4	30·5	B
	19	0		14·41	540·4	29·9	589·3	30·6	H
	20	0		14·06	540·1	30·0	589·8	30·7	H
	21	0		13·72	538·1	30·1	593·2	30·8	W
	22	0		13·25	535·8	30·2	595·1	30·9	H
	23	0		14·18	535·8	30·3	596·1	31·0	H
9	0	0		15·85	535·4	30·3	595·8	31·0	H
	1	0		16·79	537·7	30·4	596·3	31·1	H
	2	0		16·73	540·6	30·6	596·9	31·2	H
	3	0		16·28	542·9	30·7	596·3	31·3	H
	4	0		15·74	543·2	30·9	597·9	31·5	H
	5	0		14·84	542·7	31·0	596·8	31·9	H
	6	0		14·41	543·1	31·1	594·8	32·0	B
	7	0		13·79	541·6	31·2	593·3	32·0	B
	8	0		13·46	542·8	31·3	592·1	32·0	B
	9	0		13·39	541·1	31·3	593·5	32·1	B
	10	0		13·32	540·6	31·4	594·3	32·1	B
	11	0		13·46	541·1	31·4	593·6	32·1	W
	12	0		13·97	541·3	31·4	592·1	32·0	W
	13	0	25	14·28	540·6	31·4	592·4	32·0	W
	14	0		14·64	540·7	31·4	590·6	31·9	W
	15	0		15·14	537·7	31·4	591·4	31·9	W
	16	0		16·38	539·9	31·4	589·4	31·9	W
	17	0		14·28	541·3	31·5	580·8	32·0	W
	18	0		09·96	541·7	31·5	579·6	32·0	W
	19	0		12·36	545·5	31·6	579·2	32·1	B
	20	0		14·17	538·9	31·7	583·0	32·2	B
	21	0		13·77	543·9	31·7	580·4	32·2	H
	22	0		16·01	539·5	31·8	581·8	32·3	H
	23	0		15·94	534·3	31·9	588·4	32·4	H
10	0	0		18·10	535·5	31·9	595·3	32·8	B
	1	0		18·16	536·8	32·0	598·0	33·0	H
	2	0		17·15	537·7	32·3	596·9	33·2	H
	3	0		17·58	539·4	32·5	602·5	33·3	H
	4	0		16·12	536·5	32·7	607·7	33·5	B
	5	0		15·78	542·7	32·8	603·2	33·6	B
	6	0		14·43	543·5	32·8	599·1	33·6	W
	7	0		14·03	542·2	32·9	597·0	33·7	W
	8	0		13·72	540·0	33·0	596·1	33·8	W
	9	0		13·52	539·2	33·0	595·4	33·8	W
	10	0		13·17	537·8	33·1	595·8	33·8	W
	11	0		12·35	537·0	33·2	596·5	33·8	H
	12	0		12·60	538·8	33·2	596·6	33·9	H
	13	0	25	13·34	540·6	33·2	592·0	34·0	H
	14	0		13·94	541·8	33·2	589·7	34·0	H
	15	0		14·37	540·1	33·3	590·1	34·0	H
	16	0		15·17	541·1	33·3	590·0	34·0	H
	17	0		15·17	542·6	33·3	588·2	33·9	H
	18	0		14·98	544·4	33·3	587·3	33·9	H
	19	0		14·44	544·7	33·2	584·0	33·8	W
	20	0		14·53	545·0	33·1	581·9	33·7	W
10	21	0	25	13·77	543·5	33·1	585·1	33·7	B
	22	0		13·47	541·1	33·1	584·8	33·6	W
	23	0		14·21	540·2	33·0	583·5	33·6	W
11	0	0		15·79	538·8	33·0	586·4	33·6	W
	1	0		17·15	539·7	33·0	588·8	33·5	W
	2	0		16·84	536·7	33·0	592·6	33·5	W
	3	0		18·82	540·2	33·0	594·8	33·5	W
	4	0		18·55	539·3	33·0	596·7	33·5	W
	5	0		15·98	542·1	33·0	595·6	33·5	W
	6	0		15·11	541·2	33·0	595·4	33·5	H
	7	0		14·24	542·1	33·0	593·2	33·5	H
	8	0		13·74	541·3	33·0	592·1	33·5	H
	9	0		13·16	538·1	33·0	593·2	33·5	H
	10	0		12·98	536·4	33·0	591·6	33·4	H
	11	2		11·22	539·5	32·9	588·9	33·3	B
	12	0		12·42	542 6	32·9	585·6	33·2	B
	13	0	25	13·07	542·5	32·8	581·0	33·1	B
	14	0		13·47	540·9	32·8	581·7	33·0	B
	15	0		14·26	540·9	32·7	584·0	32·9	B
	16	0		14·67	541·7	32·6	584·7	32·8	B
	17	0		14·84	542·5	32·5	582·9	32·7	B
	18	0		13·91	544·4	32·4	581·9	32·6	B
	19	0		14·15	543·0	32·3	582·9	32·6	H
	20	0		14·37	543·1	32·2	581·1	32·5	H
	21	0		13·93	542·9	32·2	589·8	32·4	W
	22	0		14·64	540·9	32·1	581·1	32·4	H
	23	0		14·53	538·5	32·1	581·0	32·3	H
12	0	0		15·91	536·9	32·0	582·1	32·2	H
	1	0		16·15	537·6	32·0	586·4	32·2	H
	2	0		16·48	539·5	32·0	582·8	32·2	H
	3	0		16·01	540·0	32·0	585·6	32·3	H
	4	0		15·31	541·3	32·0	588·1	32·4	H
	5	0		14·48	542·0	32·0	589·9	32·5	W
	6	0		14·18	542·7	32·1	590·2	32·6	B
	7	0		14·48	541·4	32·1	591·1	32·6	B
	8	0		14·31	540·7	32·1	590·2	32·6	B
	9	0		13·27	540·2	32·0	589·0	32·5	B
	10	0		13·09	537·8	32·0	590·1	32·5	B
	11	0		12·98	537·6	32·0	589·7	32·5	W
	12	0		12·93	539·5	32·0	587·8	32·5	W
	13	0	25	13·43	538·6	32·0	588·5	32·5	W
	14	0		14·37	537·8	32·0	588·1	32·5	W
	15	0		14·71	540·5	32·0	586·0	32·4	W
	16	0		14·70	540·6	32·0	586·6	32·4	W
	17	0		14·60	542·2	32·0	584·6	32·4	W
	18	0		14·26	544·4	32·0	582·3	32·4	W
	19	0		14·80	544·2	32·0	581·4	32·4	B
	20	0		14·78	544·3	31·9	579·4	32·2	B
	21	0		14·55	540·0	31·8	581·9	32·1	H
	22	0		14·06	538·1	31·7	583·8	32·0	H
	23	0		15·25	536·6	31·7	585·6	32·0	H
13	0	0		16·38	535·6	31·7	589·0	32·1	B
	1	0		17·46	536·8	31·6	586·0	32·1	H
	2	0		16·68	539·0	31·7	584·0	32·2	H
	3	0		16·21	538·4	31·8	592·0	32·5	B
	4	0		15·14	538·4	31·8	594·1	32·4	H

DECLINATION. Magnet untouched, Nov. 11d—Dec. 25d.

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·0000085.

Göttingen Mean Time of Declination Obs.			DECLINATION.	BIFILAR.		BALANCE.		Observer's Initial.
				Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
13	5	0	25 14·73	541·1	31·9	594·3	32·3	B
	6	0	14·23	541·7	31·8	592·1	32·1	W
	7	0	14·20	540·2	31·7	591·3	32·1	W
	8	0	13·79	539·6	31·7	590·4	32·0	W
	9	0	13·63	539·5	31·7	589·4	32·0	W
	10	0	13·32	539·2	31·7	589·2	32·0	W
	11	0	13·91	539·2	31·8	589·6	32·1	H
	12	0	13·63	539·7	31·8	590·0	32·3	H
	13	0	25 13·79	539·7	31·8	589·6	32·4	H
	14	0	14·23	539·8	31·9	588·4	32·4	H
	15	0	14·51	540·4	32·0	588·7	32·5	H
	16	0	14·98	541·1	32·0	588·8	32·7	H
	17	0	14·38	541·6	32·1	588·4	32·8	H
	18	0	14·37	542·2	32·3	588·7	33·0	H
	19	0	14·20	543·1	32·4	588·6	33·2	W
	20	0	13·79	545·7	32·6	586·2	33·4	W
	21	0	13·39	545·9	32·8	583·1	33·5	B
	22	0	13·84	546·0	32·9	580·5	33·6	W
	23	0	14·92	543·4	33·0	575·1	33·8	W
14	0	0	15·92	544·2	33·1	575·6	33·9	W
	1	0	17·37	542·5	33·2	573·8	34·0	W
	2	0	20·53	540·7	33·4	575·0	34·2	W
	3	0	15·72	539·6	33·6	579·4	34·3	W
	4	0	15·64	544·9	33·7	587·0	34·5	W
	5	0	19·10	547·5	33·8	586·2	34·5	W
	6	0†	15·20	518·8	33·9	632·1	34·6	W
	7	0†	09·69	521·1	34·0	804·8	34·9	W
	8	0†	13·88	517·4	34·2	649·5	35·2	W
	9	0	11·37	532·5	34·4	719·4	35·5	H
	10	0	14·50	531·5	34·5	687·3	35·5	H
	11	3	13·64	527·3	34·6	654·2	35·4	B
	12	0	12·73	526·3	34·7	631·2	35·3	B
15	13	0	25 11·98	531·9	34·4	607·3	34·6	W
	14	0†	18·30	535·3	34·3	603·5	34·6	W
	15	0	16·03	532·9	34·3	593·8	34·6	W
	16	0	14·49	536·6	34·3	587·9	34·6	W
	17	0	13·60	532·9	34·3	592·0	34·6	W
	18	0	14·60	533·9	34·2	599·5	34·6	W
	19	0	15·56	531·7	34·3	606·0	34·7	B
	20	0	14·55	538·7	34·3	607·6	34·7	B
	21	0	14·99	535·2	34·3	609·1	34·7	H
	22	0	14·60	532·2	34·3	605·7	34·8	H
	23	0	14·58	529·7	34·4	607·2	35·0	H
16	0	0	16·68	535·1	34·5	609·7	35·2	H
	1	0	15·91	535·1	34·7	611·0	35·4	H
	2	0	16·55	534·8	34·8	609·8	35·5	B
	3	0	15·83	538·5	35·0	615·7	35·6	B
	4	0	15·54	538·8	35·1	620·1	35·7	H
	5	0†	04·78	511·5	35·1	650·8	35·9	B
	6	0	14·23	528·6	35·2	651·0	36·2	W
	7	0	17·29	532·6	35·4	635·0	36·3	W
	8	0	13·66	536·6	35·6	626·4	36·3	W
	9	0	09·15	538·4	35·6	622·6	36·3	W
	10	0	09·03	542·3	35·7	612·5	36·3	W
	11	0	11·98	532·0	35·7	608·8	36·3	H
	12	0	11·74	532·8	35·8	605·1	36·4	H
16	13	0	25 15·56	539·3	35·8	587·3	36·5	H
	14	0	13·83	534·7	35·9	588·5	36·5	H
	15	0	13·70	533·7	36·0	597·6	36·6	H
	16	0	15·01	534·4	36·1	600·9	36·7	H
	17	0	14·80	535·5	36·2	603.8	36·8	H
	18	0	15·38	537·1	36·2	605·3	37·0	H
	19	0	15·09	539·2	36·3	603·0	37·0	W
	20	0	15·34	536·0	36·4	604·1	37·0	W
	21	0	15·07	537·1	36·5	604·6	37·1	B
	22	0	14·26	536·5	36·6	606·2	37·1	W
	23	0	14·43	532·3	36·6	605·4	37·1	W
17	0	0	14·98	534·6	36·7	605·2	37·2	W
	1	0	16·15	534·4	36·8	608·9	37·3	W
	2	0	16·48	534·5	36·9	609·4	37·5	W
	3	0	15·78	533·9	37·1	607·7	37·7	W
	4	0	14·64	534·6	37·3	611·1	38·0	W
	5	0	13·19	533·9	37·4	611·7	38·1	W
	6	0	14·30	539·8	37·6	607·5	38·2	H
	7	0	14·67	536·9	37·7	606·9	38·4	H
	8	0	11·57	539·0	37·8	607·1	38·5	H
	9	0	13·14	539·2	37·8	604·7	38·5	H
	10	0	13·64	538·5	37·8	603·1	38·5	H
	11	0	13·46	537·6	37·9	599·8	38·5	B
	12	0	13·69	537·9	37·9	598·1	38·5	B
	13	0	25 13·76	537·5	37·9	597·6	38·5	B
	14	0	14·13	537·6	37·9	596·7	38·5	B
	15	0	14·13	537·8	37·9	596·2	38·5	B
	16	0	14·28	538·8	37·9	595·5	38·5	B
	17	0	16·79	542·5	37·9	589·9	38·5	B
	18	0	12·38	539·6	37·9	586·8	38·5	B
	19	0	13·39	539·8	37·9	586·7	38·5	H
	20	0	15·12	544·7	37·9	586·2	38·5	H
	21	0	14·40	536·1	38·0	592·5	38·6	W
	22	0	15·07	537·8	38·0	594·4	38·6	H
	23	0	14·53	535·2	38·1	593·6	38·6	H
18	0	0	15·89	535·2	38·1	591·6	38·6	H
	1	0	16·21	336·5	38·2	594·2	38·7	H
	2	0	16·46	538·5	38·3	595·5	38·8	H
	3	0	15·38	537·6	38·4	595·1	38·8	H
	4	0	14·84	538·4	38·5	594·4	38·9	H
	5	0	14·01	540·2	38·6	596·6	39·0	H
	6	0	14·18	539·5	38·7	599·0	39·2	B
	7	0	14·44	538·1	38·7	598·7	39·2	B
	8	0	14·46	538·1	38·7	599·9	39·0	B
	9	0	14·15	539·7	38·6	599·6	39·0	B
	10	0	14·01	540·5	38·5	595·6	39·0	H
	11	0	12·25	537·8	38·5	603·8	39·2	H
	12	0	08·14	552·6	38·5	592·4	39·3	H
	13	0	25 10·48	535·0	38·6	586·7	39·5	D
	14	0	13·91	538·0	38·7	582·8	39·9	D
	15	0	14·53	537·8	38·8	583·8	40·0	D
	16	0	14·67	540·8	38·9	580·7	40·0	D
	17	0	14·37	542·9	38·9	579·9	40·0	D
	18	0	13·99	543·4	38·9	579·2	40·0	W
	19	0	14·03	542·3	39·0	579·9	40·0	W
	20	0	14·37	542·7	39·0	580·3	40·0	W

DECLINATION. Magnet untouched, Nov. 11d—Dec. 25d.

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
18	21	0	25	19·22	533·4	39·0	582·5	40·0	W
	22	0		22·01	543·2	39·0	573·3	39·9	B
	23	0		18·34	533·1	38·8	577·1	39·6	H
19	0	0		16·45	530·3	38·7	585·3	39·4	B
	1	0		16·23	537·2	38·7	591·6	39·2	H
	2	0		18·07	536·3	38·6	595·0	39·1	H
	3	0		16·45	535·3	38·7	598·3	39·4	H
	4	0		17·24	520·1	38·9	617·5	39·7	B
	5	0		12·80	530·6	39·0	627·2	39·8	B
	6	0		15·09	535·0	39·1	627·1	40·0	D
	7	0		16·10	535·7	39·1	618·4	40·0	D
	8	0		14·41	535·9	39·0	608·6	40·0	W
	9	0		12·72	532·9	39·0	600·1	39·8	W
	10	0		11·71	528·6	38·8	597·7	39·4	W
	11	0		02·52	526·8	38·6	599·4	38·8	H
	12	0		07·29	533·4	38·2	585·5	38·2	H
	13	0	25	13·17	536·2	37·8	575·7	37·7	H
	14	0		14·03	533·5	37·3	569·5	37·0	H
	15	0		14·98	534·3	36·9	577·5	36·5	H
	16	0		15·58	531·3	36·4	582·9	36·0	H
	17	0		12·83	534·4	36·0	578·3	35·5	H
	18	0		12·22	534·9	35·6	578·6	35·0	H
	19	0		13·16	537·9	35·2	586·3	34·6	W
	20	0		14·48	543·3	34·8	590·3	34·2	W
	21	0		13·56	533·9	34·4	597·8	33·7	B
	22	0		13·44	533·9	34·0	596·8	33·1	W
	23	0		15·42	530·7	33·6	597·9	32·6	W
20	0	0		18·72	531·5	33·1	598·7	32·4	W
	1	0		21·76	522·0	33·0	611·9	32·4	W
	2	0		18·41	534·5	32·9	610·8	32·4	W
	3	0†	25	23·92	535·8	32·9	630·2	32·8	W
	4	0†	24	53·67	547·3	33·0	677·6	33·2	W
	5	0	25	11·68	528·1	33·1	663·6	33·6	W
	6	0	25	15·58	531·4	33·2	642·0	33·5	H
	7	0	25	15·81	535·2	33·2	632·2	33·4	H
	8	0	25	10·40	525·6	33·1	632·6	33·2	H
	9	0†	24	51·09	567·4	33·0	600·8	33·0	H
	10	0†	25	06·73	523·2	32·8	591·4	32·7	H
	11	0		12·04	530·8	32·5	601·9	32·5	B
	12	0		09·94	537·3	32·3	593·6	32·3	B
	13	0†	25	11·21	545·5	32·0	543·4	32·0	B
	14	0†		17·60	534·9	31·8	552·4	31·8	B
	15	0†		11·72	528·5	31·7	552·3	31·7	B
	16	0		15·47	537·2	31·4	555·2	31·4	B
	17	0		15·17	535·4	31·2	558·4	31·0	B
	18	0†		19·84	535·9	30·9	563·9	30·7	B
	19	0†		19·32	542·4	30·8	549·5	30·6	H
	20	0†		15·51	538·2	30·7	578·7	30·6	H
	21	0		14·75	534·7	30·6	591·0	30·6	W
	22	0		15·98	533·1	30·5	595·3	30·5	H
	23	0		17·12	522·6	30·4	599·8	30·5	H
21	0	0		19·42	521·9	30·3	608·6	30·4	H
	1	0		21·37	535·0	30·2	612·9	30·4	H
	2	0		17·94	533·8	30·2	619·4	30·5	H
	3	0		16·10	527·6	30·4	634·4	30·6	H
	4	0†		01·14	521·0	30·6	672·9	30·7	H

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
21	5	0†	25	19·37	526·0	30·8	668·4	31·2	H
	6	0†		14·71	528·2	30·9	656·9	31·8	B
	7	0		15·27	531·2	31·2	640·3	32·2	B
	8	0		15·01	532·5	31·5	631·6	32·4	B
	9	0		13·46	531·7	31·7	626·4	32·4	B
	10	0		14·04	536·3	31·7	617·7	32·3	B
	11	0		18·68	537·4	31·7	598·7	32·4	W
	12	0		11·37	535·8	31·8	593·2	32·5	W
22	13	0	25	13·14	531·8	33·6	578·9	34·3	H
	14	0		14·43	536·9	33·7	587·7	34·3	H
	15	0		13·30	536·0	33·8	595·2	34·5	H
	16	0		14·51	538·2	33·9	593·9	34·6	H
	17	0		13·29	539·2	34·0	594·0	34·7	H
	18	0		14·24	538·1	34·1	594·8	34·8	H
	19	0		14·70	539·4	34·1	594·5	34·8	W
	20	0		13·86	539·2	34·2	592·7	34·8	W
	21	0		13·90	541·1	34·3	592·7	34·8	B
	22	0		13·47	536·8	34·3	596·2	34·9	W
	23	0		14·44	535·8	34·3	598·0	34·9	W
23	0	0		15·34	536·3	34·4	597·8	35·0	H
	1	0		17·87	538·0	34·5	598·5	35·0	W
	2	0		16·36	536·7	34·6	602·0	35·1	W
	3	0		15·38	536·1	34·7	605·2	35·2	W
	4	0		16·46	536·1	34·8	605·1	35·3	W
	5	0		15·04	536·8	34·8	603·0	35·4	W
	6	0		15·25	536·7	34·9	602·2	35·4	W
	7	0		12·51	536·4	35·0	601·3	35·5	W
	8	0		14·03	538·3	35·0	595·9	35·5	H
	9	0		13·19	538·4	35·0	596·6	35·5	H
	10	0		13·47	537·4	35·0	598·2	35·6	H
	11	0		13·05	537·0	35·0	598·4	35·6	B
	12	0		11·21	535·0	35·0	601·7	35·6	B
	13	0	25	15·52	539·0	35·0	594·8	35·5	B
	14	0		13·09	537·0	34·9	592·2	35·5	B
	15	0		15·14	537·1	34·9	589·3	35·5	B
	16	0		13·93	538·8	34·9	587·8	35·5	B
	17	0		13·29	539·1	34·9	588·9	35·5	B
	18	0		14·51	539·2	34·9	591·0	35·5	B
	19	0		13·56	542·4	34·9	585·1	35·4	H
	20	0		13·91	540·2	34·9	590·7	35·4	H
	21	0		13·66	538·9	34·9	593·2	35·4	W
	22	0		13·32	539·5	34·9	594·0	35·4	H
	23	0		13·63	535·9	34·9	592·8	35·4	H
24	0	0		15·22	536·5	34·9	592·8	35·4	H
	1	0		16·18	537·9	34·9	595·7	35·4	H
	2	0		15·78	537·4	34·8	595·7	35·4	H
	3	0		15·04	538·9	34·8	594·6	35·3	H
	4	0		14·23	539·4	34·8	596·8	35·3	H
	5	0		14·53	538·9	34·8	598·4	35·3	H
	6	0		13·19	537·9	34·8	595·3	35·1	B
	7	0		12·69	541·2	34·7	594·1	35·0	B
	8	0		14·20	538·6	34·7	592·0	34·9	B
	9	0		13·09	537·2	34·6	595·0	34·8	B
	10	0		11·88	538·1	34·5	597·6	34·7	B
	11	0		11·34	534·5	34·4	600·7	34·6	W
	12	0		12·69	534·9	34·2	584·8	34·5	W

DECLINATION. Magnet untouched, Nov. 11ᵈ—Dec. 25ᵈ.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
24	13	0	25 12·60	536·5	34·1	588·4	34·4	W
	14	0	13·32	537·1	34·0	590·6	34·3	W
	15	0	14·26	537·3	34·0	591·1	34·2	W
	16	0	14·23	539·6	33·9	591·5	34·1	W
	17	0	14·11	540·9	33·8	590·8	34·0	W
	18	0	14·23	541·8	33·8	590·3	34·0	W
	19	0	14·17	541·9	33·8	589·6	34·0	B
	20	0	13·77	541·1	33·7	590·1	34·0	B
	21	0	13·70	540·4	33·7	590·6	34·0	H
	22	0	13·66	537·5	33·7	594·4	34·0	H
	23	0	14·53	536·8	33·6	594·5	34·0	H
25	0	0	15·54	537·2	33·7	592·6	33·9	B
	1	0	16·52	540·3	33·6	591·4	33·8	H
	2	0	15·54	541·4	33·6	595·4	33·8	B
	3	0	15·14	540·4	33·6	596·6	33·8	H
	4	0	14·37	540·4	33·5	596·1	33·8	H
	5	0	13·97	540·0	33·5	596·2	33·9	B
	6	0	14·70	540·0	33·5	594·4	33·9	W
	7	0	15·27	538·2	33·5	594·5	33·8	H
	8	0	15·14	535·1	33·4	597·8	33·8	H
	9	0	11·84	533·7	33·4	604·1	33·8	H
	10	0	11·34	532·6	33·4	603·9	33·8	W
	11	0	12·38	538·5	33·4	598·6	33·8	H
	12	0	12·85	537·9	33·3	596·2	33·7	H
	13	0	25 13·41	538·0	33·2	595·9	33·7	H
	14	0	13·63	539·7	33·2	595·0	33·6	H
	15	0	13·79	538·1	33·2	593·3	33·5	H
	16	0	14·44	540·5	33·1	584·2	33·4	H
	17	0	12·49	543·8	33·0	578·5	33·3	H
	18	0	13·86	543·0	33·0	579·3	33·2	H
	19	0	13·72	545·3	32·9	581·7	33·1	W
	20	0	13·94	543·6	32·9	583·4	33·1	W
	21	0	14·94	544·6	32·9	582·2	33·1	B
	22	0	15·61	539·0	32·8	584·4	33·1	W
	23	0	16·01	538·3	32·8	587·1	33·1	W
26	0	0	15·72	530·2	32·8	589·6	33·1	W
	1	0	17·57	535·8	32·8	593·8	33·1	W
	2	0	16·90	538·4	32·9	597·2	33·2	W
	3	0	14·36	538·4	33·0	603·3	33·3	W
	4	0	13·35	539·0	33·0	601·6	33·4	W
	5	0	13·23	545·0	33·1	599·4	33·6	W
	6	0	14·46	539·8	33·2	598·3	33·7	H
	7	0	14·98	541·1	33·4	596·2	33·9	H
	8	0†	11·48	529·0	33·4	621·6	34·0	H
	9	0†	12·48	535·7	33·4	618·3	34·1	H
	10	0	14·33	534·4	33·7	608·1	34·3	H
	11	0	13·79	536·0	33·9	604·2	34·5	B
	12	0	12·98	538·1	33·8	601·6	34·5	B
	13	0	25 12·46	537·4	33·9	599·7	34·4	B
	14	0	12·75	539·1	33·9	597·5	34·4	B
	15	0	13·63	540·9	33·9	594·2	34·4	B
	16	0	12·48	539·0	33·9	592·1	34·4	B
	17	0	14·91	536·5	33·9	589·3	34·4	B
	18	0	14·46	545·4	33·9	568·8	34·4	B
	19	0	17·96	544·2	33·9	570·0	34·5	H
	20	0	16·05	543·3	33·9	572·3	34·5	H

Göttingen Mean Time of Declination Obs.			Declination.	Bifilar. Corrected.	Bifilar. Thermometer.	Balance. Corrected.	Balance. Thermometer.	Observer's Initial.
d.	h.	m.	° ′	Sc. Div.	°	Mic. Div.	°	
26	21	0	25 13·70	541·2	33·9	576·5	34·5	W
	22	0	15·07	543·1	34·0	576·6	34·5	H
	23	0	14·98	541·8	34·0	579·2	34·5	H
27	0	0	16·57	540·5	34·1	582·6	34·5	H
	1	0	15·67	542·9	34·2	583·7	34·8	H
	2	0	15·38	543·9	34·3	585·7	35·0	H
	3	0	15·59	541·0	34·4	593·8	35·0	H
	4	0	13·79	539·8	34·7	593·7	35·1	H
	5	0	13·81	540·3	34·7	595·5	35·2	H
	6	0	13·79	540·8	34·8	593·2	35·3	B
	7	0	13·77	540·7	34·8	593·1	35·3	B
	8	0	13·12	538·6	34·7	593·9	35·2	B
	9	0	11·96	535·5	34·7	595·7	35·1	B
	10	0†	15·25	530·8	34·6	601·6	34·9	B
	11	0	13·64	531·3	34·4	600·8	34·6	W
	12	0†	08·65	535·6	34·2	600·2	34·4	W
	13	0†	25 06·09	520·4	34·0	604·0	34·3	W
	14	0†	03·60	527·4	33·9	599·7	34·2	W
	15	0	07·04	535·0	33·8	600·6	34·1	W
	16	0	10·41	535·4	33·7	599·6	33·9	W
	17	0	12·89	538·1	33·5	595·0	33·6	W
	18	0	12·58	538·0	33·3	593·2	33·4	W
	19	0	14·78	536·5	33·1	593·7	33·2	B
	20	0	13·74	536·4	32·9	593·1	33·1	B
	21	0	13·76	537·0	32·8	590·7	32·8	H
	22	0	14·53	536·5	32·7	587·5	32·5	H
	23	0	14·78	537·7	32·5	588·1	32·4	H
28	0	0	16·92	539·5	32·3	593·6	32·4	B
	1	0	16·57	533·0	32·2	596·6	32·4	H
	2	0	15·65	532·8	32·1	603·5	32·3	B
	3	0	15·38	536·6	32·1	608·7	32·4	H
	4	0	14·70	539·4	32·1	605·6	32·5	H
	5	0	14·87	538·3	32·1	605·8	32·5	B
	6	0	13·59	540·5	32·1	605·2	32·7	W
	7	0	13·00	539·5	32·1	603·3	32·7	W
	8	0	13·86	538·9	32·2	603·8	32·8	W
	9	0	13·19	538·9	32·3	602·6	32·8	W
	10	0	13·17	534·3	32·3	603·7	32·8	W
	11	0	12·43	538·2	32·4	602·9	32·8	H
	12	0	11·66	538·3	32·5	602·7	33·0	H
29	13	0†	25 15·72	515·1	36·2	680·3	36·6	H
	14	0†	24 46·92	539·9	36·2	733·3	36·6	H
	15	0†	25 12·72	496·4	36·1	603·6	36·6	H
	16	0†	15·91	492·9	36·1	608·7	36·6	H
	17	0†	09·15	516·0	36·1	612·1	36·6	H
	18	0	10·67	517·6	36·1	599·6	36·6	H
	19	0	11·48	523·5	35·9	618·7	36·6	B
	20	0	11·34	531·5	35·9	633·0	36·6	B
	21	0	13·39	532·7	35·9	632·8	36·5	B
	22	0	13·19	535·4	35·8	623·8	36·3	W
	23	0	14·82	529·7	35·7	627·9	36·2	W
30	0	0	14·20	530·0	35·8	628·7	36·2	W
	1	0	19·27	531·7	35·9	628·3	36·4	W
	2	0	14·14	534·9	35·9	632·0	36·6	W
	3	0	14·97	535·1	36·1	635·6	36·8	W
	4	0	15·85	537·7	36·4	632·9	37·0	W

DECLINATION. Torsion removed, Dec. 25d 23h, $-6\frac{1}{2}°$; 26d 23h, $+55°$*; 29d 23h, 0°; 30d 3h, $-14°$. Effect of $+10°$ of Torsion $= -0'{\cdot}84$.
BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·0000085.

† Extra Observations made
Dec. 26d 0h—4h. Magnet with short scale used in the declinometer.
Dec. 26d 22h + Experiments made for the value of the torsion coefficient of the declinometer thread; effect of 90° of torsion = 7′·53.
* Dec. 26d 23h + The large amount of torsion now found was most probably introduced on removing the short scale magnet at 26d 4h + as the fibres then became loose. Comparison with the unifilar before and after removing the torsion gave for its effect − 4′·9, and the effect deduced from the value of the torsion coefficient = − 5′·2. The observations from 26d 4h—23h have been corrected by + 5′·05.
Dec. 30d 0h—3h. Magnet with short scale used in the declinometer.

Göttingen Mean Time of Declination Obs.			Declination.		Bifilar.		Balance.		Observer's Initial.
					Corrected.	Thermometer.	Corrected.	Thermometer.	
d.	h.	m.	°	′	Sc. Div.	°	Mic. Div.	°	
30	5	0	25	17·49	544·9	36·7	631·8	37·4	B
	6	0		18·34	531·7	36·8	648·3	37·6	B
	7	0†		17·12	522·4	36·9	710·3	37·7	B
	8	0†		06·84	557·8	37·0	620·5	37·9	B
	9	0†		06·26	538·1	37·2	614·4	38·2	B
	10	0		07·00	532·9	37·4	621·7	38·2	B
	11	0		08·01	524·2	37·6	617·9	38·2	W
	12	0		11·24	520·3	37·6	586·8	38·2	W
	13	0	25	10·25	522·9	37·5	558·6	38·1	W
	14	0		14·41	526·4	37·4	583·5	38·0	W
	15	0		11·35	528·1	37·4	599·1	37·9	W
	16	0		12·49	524·4	37·3	606·6	37·8	W
	17	0		16·39	531·7	37·2	598·1	37·7	W
	18	0		15·07	539·2	37·1	599·8	37·5	W
	19	0		12·48	536·3	37·1	608·1	37·6	H
	20	0		12·18	534·1	37·1	611·4	37·6	H
30	21	0	25	12·83	534·8	37·0	612·5	37·5	B
	22	0		15·51	518·1	37·0	618·9	37·4	H
	23	0		18·84	521·2	36·9	617·1	37·3	H
31	0	0		15·45	531·7	36·9	625·2	37·3	B
	1	0		19·75	531·4	36·9	623·4	37·3	H
	2	0		19·14	524·2	37·0	643·3	37·5	H
	3	0		17·61	525·7	37·4	653·0	38·2	H
	4	0		16·45	534·8	37·9	664·3	38·6	H
	5	0		14·21	537·2	38·4	662·8	39·2	H
	6	0†		15·85	537·1	38·7	652·5	39·4	W
	7	0†		12·75	544·1	38·8	647·0	39·5	W
	8	0		12·98	538·7	38·8	645·1	39·4	W
	9	0		12·83	537·0	38·7	633·7	39·2	W
	10	0†		03·38	547·6	38·6	616·4	38·8	W
	11	0		10·98	533·0	38·3	604·6	38·5	B
	12	0		09·30	532·1	38·1	609·9	38·3	B

DECLINATION. Magnet untouched, Dec. 30ᵈ—Feb. 5ᵈ, 1845.

BIFILAR. Observed 2ᵐ after the Declination, k=0·000140. BALANCE. Observed 3ᵐ after the Declination, k=0·0000085.

† Extra Observations made.

TERM-DAY OBSERVATIONS

OF

MAGNETOMETERS.

MAKERSTOUN OBSERVATORY,

1844.

Göttingen Mean Time of Declination Observation.	January 24, 25.											
	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		10h.			14h.			18h.			22h.	
0	25 18·67	522·5	780·7	25 19·32	518·3	771·8	25 22·18	524·6	623·6	25 26·90	514·1	747·4
5	18·84	522·7	779·4	19·32	517·6	,,	21·91	522·5	621·9	27·55	513·3	749·7
10	19·07	523·1	781·3	18·94	520·6	769·2	21·53	522·3	623·5	27·14	512·0	752·8
15	18·87	520·9	782·3	19·62	526·8	765·2	22·24	522·3	628·1	27·64	512·8	748·0
20	18·84	521·0	780·8	21·06	528·8	762·3	23·01	521·7	632·1	27·99	511·5	755·9
25	18·84	521·2	783·0	22·10	527·5	760·6	23·61	520·3	635·1	28·96	510·2	759·9
30	18·94	521·6	,,	21·73	523·1	757·5	24·42	519·5	639·4	28·60	508·4	761·8
35	18·90	521·0	782·3	20·72	519·6	756·3	26·10	519·5	643·5	29·10	508·9	763·1
40	18·84	520·8	,,	18·92	517·4	755·6	27·29	518·9	649·1	28·32	507·1	763·0
45	18·77	520·6	,,	19·05	515·0	755·6	28·76	520·0	,,	28·92	506·5	764·8
50	18·74	521·6	,,	17·89	514·8	756·6	29·04	521·1	650·5	28·32	507·1	766·3
55	18·77	522·6	780·3	16·99	517·1	755·6	29·34	523·9	,,	28·83	507·8	,,
		11h.			15h.			19h.			23h.	
0	25 18·18	524·0	779·2	25 16·12	517·8	754·0	25 28·94	524·5	650·3	25 28·92	509·0	767·7
5	18·38	523·7	,,	15·67	518·8	754·3	28·15	525·4	651·4	29·09	510·4	767·0
10	18·11	524·9	778·3	15·52	517·9	752·3	27·64	524·7	653·3	29·29	509·8	768·0
15	18·90	524·2	777·7	14·43	519·6	749·3	27·12	525·1	654·8	30·15	510·0	,,
20	19·37	522·9	,,	13·63	520·1	744·8	26·63	523·4	658·8	29·54	510·4	770·[illegible]
25	19·04	522·0	777·1	13·34	520·2	744·6	26·27	521·6	662·9	29·73	509·7	771·[illegible]
30	18·95	521·2	,,	14·50	521·6	744·5	26·68	519·9	668·3	29·61	510·1	772·[illegible]
35	18·63	520·9	777·3	16·15	522·5	744·4	27·44	518·1	673·5	29·51	509·3	774·[illegible]
40	18·81	521·2	,,	17·07	523·7	742·0	27·71	518·3	677·1	29·59	510·6	774·[illegible]
45	19·17	522·5	,,	17·68	521·9	741·3	27·84	520·5	680·6	28·65	512·0	774·[illegible]
50	19·26	523·0	,,	18·43	520·3	737·1	28·92	520·3	682·8	28·99	513·2	775·[illegible]
55	18·88	525·3	774·0	16·65	519·8	729·1	28·99	519·7	685·4	28·76	514·2	776·[illegible]
		12h.			16h.			20h.			0h.	
0	25 20·06	524·5	774·0	25 13·44	520·5	726·1	25 28·90	518·6	686·9	25 28·25	513·8	777·[illegible]
5	20·02	524·5	773·4	12·06	521·9	726·7	29·09	518·4	691·7	28·56	510·9	779·[illegible]
10	20·58	524·4	,,	13·36	517·4	732·0	29·29	517·7	694·3	27·78	513·7	780·[illegible]
15	19·73	522·0	773·4	13·00	514·7	729·8	29·09	516·7	697·9	28·49	515·4	782·[illegible]
20	18·34	521·0	775·1	12·82	515·4	726·1	29·56	515·8	703·5	28·25	515·6	783·[illegible]
25	18·30	520·5	775·8	14·33	516·0	725·5	29·56	514·0	706·5	28·67	515·2	784·[illegible]
30	18·72	522·0	776·3	16·95	515·0	,,	29·24	513·5	709·2	28·87	513·1	786·[illegible]
35	18·92	522·3	,,	19·39	514·9	721·0	29·03	514·7	711·9	27·79	513·9	788·[illegible]
40	18·81	524·6	773·5	20·08	521·0	706·8	28·94	513·7	714·6	28·18	512·9	788·[illegible]
45	18·67	525·3	772·0	15·91	525·3	697·9	28·29	516·8	713·0	28·23	513·8	792·[illegible]
50	18·20	523·6	771·8	15·25	526·8	693·4	27·95	515·6	716·8	28·97	513·8	793·[illegible]
55	18·07	521·6	773·2	14·94	529·7	689·0	27·56	513·2	721·7	30·00	516·7	796·[illegible]
		13h.			17h.			21h.			1h.	
0	25 18·03	521·4	772·9	25 13·59	527·8	685·4	25 27·39	513·8	719·3	25 29·98	517·4	795[illegible]
5	17·94	521·3	772·7	14·04	516·2	,,	27·71	514·5	725·3	30·25	514·7	797[illegible]
10	17·84	520·8	772·2	15·04	506·2	688·0	27·82	516·2	726·5	30·20	516·9	798[illegible]
15	17·63	519·8	772·4	16·30	495·1	691·9	27·29	514·9	728·1	31·34	519·4	802[illegible]
20	17·68	520·4	772·6	17·70	494·0	696·2	26·84	514·9	729·4	31·95	515·2	803[illegible]
25	17·87	521·5	772·4	20·82	500·2	694·8	26·92	515·4	731·6	31·36	515·4	,,
30	17·56	520·7	770·3	22·50	506·6	681·0	26·88	516·9	731·4	32·35	516·0	805[illegible]
35	17·81	519·6	772·3	22·91	513·2	665·6	26·87	515·4	732·0	31·79	515·3	808[illegible]
40	18·14	518·5	,,	22·58	518·9	651·0	26·84	516·3	738·6	31·05	517·0	,,
45	18·07	517·9	773·4	22·30	523·0	641·6	26·23	516·2	738·3	31·65	515·6	811[illegible]
50	18·23	518·3	772·6	22·15	525·8	634·2	26·65	515·4	742·3	30·31	514·9	814[illegible]
55	19·05	518·9	,,	22·33	526·3	628·7	26·88	515·3	744·5	30·29	515·4	817[illegible]

BIFILAR. Observed 2m after the Declination, $k=0·000140$. BALANCE. Observed 3m after the Declination, $k=0·0000085$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hour[illegible] Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previo[illegible] observation being appreciable, the micrometers were not altered.

Göttingen Mean Time of Declination Observation.	JANUARY 24, 25.						FEBRUARY 23, 24.					
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		2h.			6h.			10h.			14h.	
0	25 30·10	514·6	820·3	25 21·10	519·4	792·9	25 15·96	520·1	761·8	25 16·82	523·6	,,
5	29·56	515·4	822·2	20·90	519·3	790·4	16·41	520·6	762·5	16·99	522·6	738·4
10	29·01	512·6	824·4	20·87	519·6	788·8	16·75	521·6	762·1	17·40	521·8	,,
15	27·96	516·7	825·2	20·69	519·8	787·3	16·75	522·9	760·6	17·24	520·2	738·1
20	28·85	519·8	827·0	20·55	519·5	,,	17·07	522·3	759·6	16·55	519·3	739·1
25	29·59	518·8	833·4	20·56	519·2	790·0	16·89	521·8	758·6	16·08	520·1	739·4
30	28·87	519·1	829·7	20·47	519·1	788·5	16·52	520·9	757·8	15·69	521·1	,,
35	28·97	518·9	829·9	20·55	519·2	788·5	15·88	520·5	757·2	15·99	521·1	740·9
40	28·29	516·5	,,	20·45	518·9	786·6	15·15	521·0	756·1	16·16	520·7	742·0
45	27·64	519·5	831·4	20·50	518·4	,,	14·68	521·0	755·5	16·32	520·2	742·1
50	28·77	522·7	836·4	20·33	518·6	787·3	14·75	520·2	754·8	16·35	519·9	,,
55	28·89	522·8	838·5	20·25	518·9	786·2	15·01	520·0	755·2	16·28	519·5	,,
		3h.			7h.			11h.			15h.	
0	25 30·00	521·1	841·4	25 20·32	518·6	,,	25 15·12	523·7	752·6	25 16·55	519·6	,,
5	29·50	520·1	842·2	20·90	518·8	781·7	14·84	528·0	750·2	16·63	520·5	,,
10	29·29	519·5	842·0	20·85	519·5	779·9	15·27	528·4	747·5	16·68	520·8	741·7
15	28·89	519·2	843·0	20·90	520·9	,,	15·47	524·9	747·3	16·62	520·5	,,
20	28·29	517·0	842·0	20·89	521·8	779·1	15·44	522·3	748·4	16·66	520·4	743·1
25	27·55	519·3	840·5	20·82	522·2	,,	16·15	519·9	749·2	16·75	520·5	744·1
30	27·26	518·6	842·1	20·70	520·3	,,	16·53	522·3	747·6	17·36	521·2	742·5
35	28·23	514·9	842·1	20·15	519·3	778·4	16·95	525·1	745·1	17·36	522·2	741·3
40	27·32	515·8	839·6	19·95	519·3	778·0	17·42	527·1	743·7	17·31	522·6	743·0
45	26·10	517·5	838·9	19·66	517·8	779·3	17·31	527·5	740·5	17·37	522·4	,,
50	25·54	516·9	836·2	19·91	517·1	778·9	17·00	525·7	740·0	16·77	522·2	,,
55	24·82	514·2	835·6	18·88	527·9	771·7	16·66	523·7	739·5	16·68	522·2	743·1
		4h.			8h.			12h.			16h.	
0	25 24·23	515·4	834·4	25 19·15	523·0	773·6	25 16·05	523·3	739·6	25 16·80	522·3	743·7
5	24·20	514·0	832·6	19·21	521·7	775·6	15·94	523·4	739·8	17·36	522·2	,,
10	23·63	519·8	830·1	19·44	521·7	773·8	16·15	523·5	740·2	17·60	522·2	,,
15	24·22	521·5	828·6	19·10	522·0	,,	16·45	524·0	740·5	17·65	522·9	743·2
20	24·22	520·5	827·4	19·53	519·1	775·1	16·87	523·6	739·9	17·78	523·6	743·1
25	24·80	520·5	825·0	19·44	520·6	,,	17·33	522·9	739·2	18·10	523·7	742·8
30	24·32	520·7	822·8	19·51	520·7	773·6	17·47	522·6	738·6	18·11	523·7	742·2
35	24·32	520·6	821·5	19·48	520·2	772·8	16·86	520·8	737·8	17·91	522·9	741·6
40	24·20	520·7	818·1	19·35	519·9	773·4	16·75	520·8	739·0	17·58	523·1	743·2
45	23·78	523·4	814·7	19·04	520·5	,,	16·65	520·8	738·6	17·54	523·7	742·4
50	23·24	524·5	813·3	19·08	520·3	773·7	16·23	520·9	739·5	17·49	523·4	,,
55	23·49	522·3	811·5	19·28	520·2	,,	16·21	529·9	739·7	17·58	523·1	741·5
		5h.			9h.			13h.			17h.	
0	25 23·27	521·8	809·7	25 19·29	520·3	772·8	25 16·32	521·0	740·0	25 17·09	523·1	741·3
5	22·89	521·9	808·7	19·17	519·3	,,	16·35	520·8	740·1	16·70	523·4	740·9
10	22·30	522·9	807·9	19·37	519·3	771·6	16·80	520·8	742·3	17·07	523·5	742·5
15	22·17	521·7	808·0	19·42	519·6	,,	17·54	520·1	744·1	17·46	523·7	,,
20	22·22	521·7	807·1	19·39	519·8	769·1	17·46	520·3	,,	17·49	523·6	741·5
25	22·22	521·5	806·4	19·51	520·0	,,	17·31	521·5	742·4	17·47	523·4	,,
30	22·31	519·5	804·7	19·51	519·7	768·4	17·46	522·5	741·4	17·49	523·8	740·2
35	22·17	518·4	802·4	19·44	519·8	,,	17·63	523·6	739·8	17·60	523·8	,,
40	22·00	519·2	801·7	19·35	520·8	767·6	17·42	524·3	738·4	18·00	523·7	740·5
45	21·57	519·9	799·3	19·31	520·1	,,	16·90	524·4	,,	17·58	523·8	,,
50	21·26	520·1	798·7	19·24	519·4	766·9	17·22	524·9	737·0	17·39	523·7	739·2
55	21·30	519·3	796·9	19·12	521·2	765·1	17·10	522·9	,,	17·33	523·8	,,

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·0000085.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

Göttingen Mean Time of Declination Observation.	FEBRUARY 23, 24.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		18^h.			22^h.			2^h.			6^h.	
0	25 17·36	523·6	740·9	25 19·31	526·9	734·1	25 20·49	528·4	734·2	25 19·24	524·3	734·5
5	17·53	523·6	740·9	19·51	527·0	733·5	20·55	526·8	734·2	18·97	525·0	,,
10	17·56	523·7	739·1	19·62	526·2	,,	20·09	527·3	732·7	19·05	525·4	733·9
15	17·60	523·8	,,	19·69	526·2	733·3	19·88	526·7	733·0	18·99	525·6	,,
20	17·56	524·1	738·0	20·06	525·3	733·1	19·64	526·2	732·7	18·94	526·3	733·5
25	17·49	524·3	,,	20·02	524·5	,,	19·55	526·7	732·2	20·35	526·6	,,
30	17·46	523·6	737·4	19·86	525·4	,,	19·51	527·1	731·8	19·02	527·3	732·9
35	17·49	523·4	,,	19·91	525·3	733·1	19·58	526·1	732·2	19·04	527·2	,,
40	17·58	523·3	,,	20·11	525·7	,,	19·46	524·5	732·5	18·87	527·2	735·2
45	17·73	523·7	737·2	20·15	525·7	,,	18·87	525·2	732·3	18·60	527·2	,,
50	17·56	523·8	,,	20·11	525·9	733·5	18·95	523·3	732·8	18·84	526·7	,,
55	17·56	523·7	739·4	20·23	526·0	,,	18·77	525·8	733·3	18·79	528·2	735·1
		19^h.			23^h.			3^h.			7^h.	
0	25 17·49	523·4	739·0	25 20·45	527·0	733·6	25 19·44	527·7	733·3	25 18·65	528·3	734·3
5	17·56	523·2	,,	20·50	526·1	734·2	19·44	528·4	734·9	18·54	528·5	,,
10	17·51	523·3	,,	20·23	526·4	,,	19·44	528·1	736·1	18·60	527·2	735·5
15	17·56	522·7	738·5	20·65	526·8	,,	19·14	528·2	736·9	18·81	525·7	,,
20	17·56	522·6	,,	20·70	526·5	733·9	19·48	529·9	737·8	18·82	525·6	736·0
25	17·61	522·5	,,	20·82	527·1	733·8	19·46	529·0	738·9	18·84	526·4	,,
30	17·80	523·2	,,	20·94	526·7	734·0	19·48	528·9	740·2	18·58	527·3	,,
35	17·80	523·2	,,	20·90	526·0	734·1	19·55	529·0	741·5	18·41	527·5	736·5
40	17·73	522·9	736·5	20·99	526·6	733·4	19·46	527·6	743·0	18·60	527·7	738·8
45	17·83	523·5	,,	21·06	526·4	734·7	19·28	526·8	743·6	18·28	527·9	,,
50	18·00	523·3	,,	21·10	527·1	734·2	19·04	527·5	743·6	18·25	527·6	740·2
55	18·13	523·3	,,	21·14	525·9	734·5	18·95	526·4	743·9	18·28	527·4	,,
		20^h.			0^h.			4^h.			8^h.	
0	25 18·23	522·9	735·7	25 20·89	526·3	734·7	25 18·99	525·3	744·0	25 18·21	527·4	740·7
5	18·23	521·3	,,	21·23	527·0	,,	19·05	526·3	743·4	18·27	527·6	740·4
10	17·86	523·0	,,	21·46	527·9	734·9	19·28	525·8	744·9	18·25	527·6	740·2
15	17·96	524·1	735·0	21·24	525·5	735·1	19·14	526·1	744·9	18·20	527·5	740·4
20	18·13	523·7	,,	20·85	525·8	735·4	18·90	525·7	744·4	18·10	527·5	740·4
25	18·10	523·3	735·3	21·14	526·7	,,	18·84	524·8	,,	18·07	527·3	740·6
30	18·14	523·6	,,	21·12	526·2	735·6	18·99	527·1	742·8	18·00	527·4	,,
35	18·30	523·7	,,	20·82	526·3	,,	19·21	526·6	742·6	18·11	527·3	739·9
40	18·50	522·7	,,	20·85	526·9	,,	19·10	524·8	743·6	18·00	527·0	739·2
45	18·63	523·7	,,	20·72	526·8	735·0	19·31	523·6	742·8	17·94	527·0	739·3
50	18·57	522·8	737·9	20·97	527·3	734·9	19·19	526·7	,,	17·87	526·9	738·6
55	18·34	523·5	,,	20·85	527·2	735·1	19·08	521·2	,,	17·93	526·8	738·6
		21^h.			1^h.			5^h.			9^h.	
0	25 18·57	524·6	739·7	25 20·60	527·2	734·7	25 19·34	521·1	742·1	25 17·70	526·3	738·2
5	18·84	524·4	,,	20·89	526·8	734·5	19·02	521·2	,,	17·65	526·2	,,
10	18·84	524·2	739·3	20·56	527·2	733·7	19·05	522·7	740·0	17·60	526·4	,,
15	18·87	524·0	739·8	21·17	528·8	734·1	19·17	526·2	739·7	17·67	526·3	738·0
20	18·84	524·2	,,	21·19	527·2	734·5	19·48	526·9	,,	17·49	525·7	738·9
25	18·74	524·9	737·4	20·25	527·6	733·5	19·55	525·0	739·6	17·53	525·7	739·8
30	18·81	525·4	,,	21·14	530·7	733·3	19·44	524·3	738·5	17·44	525·6	739·8
35	18·84	524·8	,,	20·92	528·1	734·3	19·48	524·2	737·7	17·56	525·9	,,
40	18·74	525·4	736·9	20·80	527·9	734·5	19·49	523·6	737·6	17·73	527·2	738·5
45	19·32	525·9	736·8	20·83	527·2	734·6	19·51	523·5	,,	17·56	527·4	737·5
50	19·31	525·7	736·2	20·69	527·2	734·9	19·39	523·8	735·6	17·60	529·1	736·4
55	19·58	526·2	735·5	20·55	525·2	734·1	19·39	523·9	734·5	17·63	527·3	736·3

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·0000085.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

Göttingen Mean Time of Declination Observation.	March 20, 21.											
	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		10h.			14h.			18h.			22h.	
0	25 13·70	523·0	744·8	25 16·75	522·0	724·3	25 17·58	521·8	722·3	25 16·99	512·0	724·7
5	11·22	531·8	738·7	16·63	522·2	723·0	17·49	520·2	721·2	17·49	512·3	724·5
10	10·31	537·5	734·8	16·62	522·1	724·8	17·80	521·1	,,	17·60	512·6	723·9
15	11·37	538·5	733·2	16·45	522·4	,,	18·16	522·5	721·2	17·94	513·9	723·0
20	12·78	535·7	735·3	16·43	522·6	725·3	18·58	522·8	719·9	18·16	512·2	722·2
25	13·79	531·9	735·0	16·35	522·6	728·6	18·84	523·0	717·3	18·16	512·0	721·3
30	14·06	526·2	,,	16·38	522·7	,,	18·75	522·7	714·9	18·16	512·7	720·8
35	13·47	523·2	735·3	16·28	522·4	,,	18·14	522·0	715·4	18·10	512·0	720·0
40	13·00	525·6	732·7	16·35	522·7	728·2	18·58	519·6	717·1	18·10	513·8	719·7
45	13·07	527·0	,,	16·57	522·2	725·2	17·40	520·1	718·8	18·30	513·7	720·1
50	13·29	528·4	731·8	16·68	522·1	725·2	17·73	523·7	718·4	18·52	513·8	720·2
55	13·86	529·1	,,	16·86	522·0	,,	17·76	522·8	719·0	18·81	514·1	720·6
		11h.			15h.			19h.			23h.	
0	25 14·41	528·6	728·2	25 16·32	521·9	724·2	25 17·44	524·0	717·8	25 19·10	515·0	719·8
5	14·92	526·1	,,	16·45	522·7	724·8	17·60	524·6	,,	19·35	514·9	720·7
10	15·07	523·9	,,	16·73	522·5	724·2	17·53	523·9	718·5	20·05	514·8	720·7
15	15·09	523·2	,,	16·72	522·9	726·2	16·95	522·8	716·5	20·11	515·0	721·6
20	14·73	522·8	725·9	16·80	523·0	724·4	16·62	520·1	718·1	20·74	515·6	723·4
25	13·99	522·8	,,	16·80	523·3	,,	16·28	520·0	719·2	21·17	516·6	724·2
30	14·46	523·2	725·4	16·68	523·3	723·1	16·15	520·3	720·4	21·66	515·8	723·9
35	14·43	525·7	722·6	16·63	523·0	725·2	16·36	520·0	721·4	21·76	514·5	,,
40	14·17	527·2	721·2	16·48	522·7	,,	16·36	520·4	722·1	21·26	512·8	725·5
45	13·90	528·1	,,	16·41	522·8	723·2	16·28	519·7	722·1	21·37	513·1	725·3
50	13·59	527·6	719·2	16·26	523·3	721·9	15·83	520·8	722·2	21·37	514·2	724·5
55	13·49	526·5	,,	16·36	523·3	,,	15·79	520·8	722·5	21·57	514·4	724·7
		12h.			16h.			20h.			0h.	
0	25 13·59	526·5	718·8	25 16·32	523·5	720·8	25 15·51	520·4	722·4	25 21·73	514·3	724·5
5	13·99	523·5	,,	16·15	523·4	721·3	15·17	521·3	722·2	21·84	513·7	724·9
10	14·13	522·5	,,	16·08	523·5	,,	14·84	520·5	722·8	21·83	514·5	725·2
15	14·60	521·3	718·8	16·01	523·4	723·3	14·70	521·1	722·9	22·27	513·3	726·3
20	14·92	520·4	,,	15·86	523·5	722·3	14·67	521·2	723·0	22·20	513·3	726·5
25	15·34	520·5	,,	15·85	523·9	722·9	15·01	520·7	723·2	22·11	513·6	726·0
30	15·54	520·3	719·5	15·65	523·6	721·9	14·78	520·0	723·7	22·06	513·8	726·6
35	16·30	520·8	,,	15·52	523·5	,,	15·24	519·9	723·5	22·24	514·1	726·4
40	16·84	522·9	721·1	15·62	522·9	724·0	15·38	520·1	724·8	22·47	514·6	726·3
45	17·58	524·2	,,	15·45	523·3	,,	15·32	518·2	724·9	22·55	516·0	725·8
50	18·11	525·0	719·5	15·58	523·0	722·8	14·89	517·3	724·5	22·98	516·2	726·9
55	18·10	525·6	,,	15·81	522·9	724·8	14·75	515·8	724·1	23·19	515·1	727·3
		13h.			17h.			21h.			1h.	
0	25 18·05	525·9	720·9	25 16·18	523·2	725·3	25 14·46	515·1	726·2	25 23·24	515·7	727·1
5	17·58	524·8	720·6	16·68	523·4	724·8	15·45	513·1	727·4	23·24	517·2	727·1
10	17·36	523·3	,,	16·35	523·8	724·9	15·44	512·4	729·2	23·19	518·0	726·2
15	17·06	524·3	723·0	16·16	523·0	725·7	15·96	510·7	729·5	23·24	517·2	726·1
20	16·92	522·6	727·3	16·41	522·6	,,	16·08	510·2	730·4	23·51	517·6	727·4
25	16·68	521·7	,,	16·05	523·1	722·9	16·87	510·6	730·7	23·25	519·5	727·0
30	16·43	522·0	727·7	16·15	523·4	722·9	16·82	510·8	729·6	23·65	517·0	726·9
35	16·84	522·0	726·5	16·79	521·5	723·9	17·42	511·1	729·6	23·32	518·7	726·5
40	16·95	522·3	724·6	16·80	521·3	723·8	17·56	511·2	729·1	23·14	519·3	,,
45	16·93	522·6	,,	16·90	521·7	724·3	17·15	511·4	728·2	23·18	519·9	725·9
50	16·89	523·0	724·1	17·67	521·7	725·1	17·22	512·1	727·5	23·21	519·7	726·4
55	16·79	522·8	,,	18·10	521·5	723·4	17·56	511·7	726·4	23·38	519·5	,,

Bifilar. Observed 2^m after the Declination, $k = 0·000140$. Balance. Observed 3^m after the Declination, $k = 0·0000085$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

Gottingen Mean Time of Declination Observation.	March 20, 21.						April 24, 25.					
	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
	2h.			6h.			10h.			14h.		
0	25 23·25	521·1	727·2	25 18·01	525·1	758·1	25 17·78	530·3	731·2	25 16·10	527·4	707·1
5	23·19	520·1	,,	18·07	525·5	758·6	17·53	530·8	730·3	16·01	528·2	,,
10	23·25	521·4	727·8	17·78	524·7	758·0	17·53	531·6	730·1	15·92	528·9	709·2
15	22·84	521·8	,,	17·54	524·6	757·9	17·96	530·9	728·9	16·03	528·4	709·9
20	22·69	521·7	727·1	17·51	524·9	757·5	18·05	530·7	728·2	16·10	527·2	,,
25	23·12	523·7	,,	17·49	524·1	757·9	18·05	530·5	727·7	16·16	526·6	710·9
30	22·74	523·0	729·0	17·29	523·0	757·8	18·23	531·0	723·7	16·13	525·3	712·4
35	22·35	523·1	,,	17·06	522·5	755·9	17·74	533·8	722·8	15·83	524·9	713·5
40	22·47	522·9	730·2	16·92	524·2	756·9	17·67	531·6	722·6	15·94	525·1	712·8
45	22·64	523·2	,,	16·97	523·4	755·6	17·44	530·4	723·4	16·12	525·5	709·3
50	22·40	522·8	732·1	16·72	523·6	,,	17·40	531·3	723·3	16·21	525·6	710·7
55	22·40	522·8	,,	16·73	524·3	,,	17·78	530·8	722·8	16·39	526·0	,,
	3h.			7h.			11h.			15h.		
0	25 22·17	523·4	730·6	25 16·97	525·2	756·3	25 17·36	530·1	722·7	25 16·82	526·1	,,
5	22·27	523·2	,,	17·02	524·2	755·7	17·02	531·2	723·4	17·09	525·7	710·1
10	22·24	523·4	730·6	17·02	525·5	755·1	17·22	531·8	721·9	17·06	525·0	,,
15	22·15	523·3	,,	16·87	526·5	752·4	17·13	531·1	720·3	16·80	525·7	716·2
20	22·00	523·8	730·3	17·31	526·0	750·0	16·68	530·2	720·6	16·97	525·7	715·9
25	21·81	522·8	730·9	17·39	525·3	,,	16·21	530·1	720·4	16·87	525·5	716·4
30	21·84	523·5	,,	17·19	525·9	748·7	16·35	530·5	721·4	16·89	525·9	714·2
35	21·90	523·9	731·4	16·93	527·4	749·7	16·28	529·8	720·0	17·34	526·5	716·1
40	21·29	524·5	730·9	17·15	527·2	748·1	16·16	529·3	718·3	17·47	524·8	714·0
45	21·59	526·1	730·6	17·42	527·6	748·4	15·94	529·4	718·8	16·82	524·9	713·0
50	21·57	527·0	731·0	17·53	528·7	746·8	15·81	529·8	719·0	16·43	524·4	714·7
55	21·53	527·2	,,	17·67	528·6	744·6	16·03	529·2	719·6	16·16	524·3	,,
	4h.			8h.			12h.			16h.		
0	25 21·56	528·1	728·3	25 17·63	527·7	,,	25 16·15	528·9	720·3	25 16·13	525·4	710·8
5	21·73	527·3	,,	17·44	527·7	745·2	16·23	529·1	720·0	16·52	524·5	710·1
10	21·37	526·4	733·3	17·61	527·3	745·4	16·95	528·6	720·1	16·50	524·1	,,
15	21·07	526·5	,,	17·42	527·3	746·7	17·80	528·7	719·5	16·08	524·3	709·8
20	21·12	525·9	733·8	17·56	527·7	746·3	18·03	530·1	716·9	16·19	524·1	,,
25	20·89	521·9	735·5	17·65	526·9	747·4	17·40	530·9	713·9	16·01	523·8	709·6
30	20·65	523·9	735·9	17·70	526·7	745·8	17·33	531·7	711·0	16·08	523·5	710·3
35	20·62	525·0	736·3	17·49	526·8	,,	16·28	533·6	708·3	15·91	523·1	711·9
40	20·35	524·6	738·1	16·97	528·1	744·9	16·12	534·6	705·8	15·71	522·7	711·3
45	20·11	525·1	738·4	16·82	528·8	744·6	15·56	534·5	704·6	16·10	522·2	713·5
50	20·16	526·2	739·4	16·87	529·0	,,	15·45	533·4	703·2	16·41	521·5	713·3
55	19·88	525·9	739·7	17·02	528·6	744·2	15·42	531·5	703·7	16·92	521·3	714·2
	5h.			9h.			13h.			17h.		
0	25 19·78	525·9	740·9	25 17·47	529·0	745·2	25 15·11	530·6	702·7	25 17·63	521·1	714·1
5	19·51	526·1	741·4	16·89	529·0	743·8	14·87	529·7	,,	17·70	521·8	713·6
10	19·46	525·9	742·4	16·59	529·2	743·3	14·67	529·0	703·2	17·93	522·6	,,
15	19·28	525·2	743·9	16·66	528·6	743·8	14·55	528·3	704·1	17·81	523·7	711·5
20	18·99	524·1	747·0	16·90	527·4	745·1	14·53	527·0	705·5	17·49	524·1	711·4
25	18·82	522·9	749·9	17·40	525·1	746·7	14·55	526·4	706·3	17·09	525·3	717·0
30	18·54	522·2	752·4	17·36	524·2	747·5	14·55	526·3	706·7	16·66	526·4	714·6
35	18·23	522·8	754·0	16·95	524·1	747·6	14·80	526·6	706·8	16·28	526·7	712·7
40	18·00	522·6	756·0	16·82	524·3	747·8	15·02	526·9	,,	16·13	526·8	707·4
45	17·94	523·5	757·0	16·68	523·5	747·9	15·18	527·3	707·9	15·71	526·1	707·8
50	18·08	523·5	757·8	16·35	523·2	748·3	15·62	528·4	707·6	15·62	525·2	710·4
55	17·83	525·1	758·1	16·68	524·4	747·8	16·15	527·5	,,	15·45	524·8	714·8

BIFILAR. Observed 2m after the Declination, $k=0{\cdot}000140$. BALANCE. Observed 3m after the Declination, $k=0{\cdot}0000085$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

APRIL 24, 25.

Göttingen Mean time of Declination Observation.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		18h.			22h.			2h.			6h.	
0	25 14·87	525·4	721·9	25 12·82	520·2	721·1	25 28·90	514·6	732·9	25 24·84	535·1	817·5
5	15·04	526·2	720·0	13·69	519·3	723·0	29·29	519·8	729·1	25·46	540·4	817·4
10	14·87	525·7	721·2	14·17	518·0	,,	29·70	528·5	726·7	24·94	543·8	,,
15	15·34	525·5	722·5	14·53	518·1	724·7	28·99	518·4	731·2	24·89	548·6	816·4
20	15·49	525·8	722·2	14·77	517·2	,,	28·82	521·2	735·5	23·05	546·2	817·9
25	15·42	526·3	,,	14·89	515·4	724·3	29·01	523·1	737·2	22·80	547·3	819·0
30	15·52	527·6	721·3	15·34	513·2	,,	30·07	526·1	736·4	23·72	546·2	822·3
35	15·54	528·8	720·3	15·67	513·2	725·1	30·81	529·7	745·4	23·45	552·3	829·4
40	15·52	529·0	,,	16·01	513·1	,,	30·85	530·5	746·3	22·48	553·6	840·0
45	15·61	529·3	720·1	16·10	512·4	725·7	31·09	528·6	750·5	20·23	554·2	855·5
50	15·51	528·9	720·2	16·38	512·4	,,	31·01	526·7	754·7	19·10	554·0	868·8
55	15·31	529·3	,,	16·82	512·7	725·7	30·98	527·9	758·8	15·94	551·8	899·5
		19h.			23h.			3h.			7h.	
0	25 15·34	528·9	720·9	25 16·90	511·7	725·6	25 31·25	525·4	761·1	25 13·12	572·3	922·9
5	14·92	528·1	721·2	16·63	512·7	,,	30·29	528·6	,,	25 04·04	587·1	988·5
10	14·20	528·8	722·5	17·53	512·4	723·7	29·12	519·7	765·5	24 51·27	610·7	1015·4
15	14·13	528·4	722·9	18·05	511·2	725·8	28·79	517·0	767·6	24 43·70	583·2	906·6
20	13·54	528·8	,,	18·11	510·1	,,	29·39	516·8	769·0	25 01·34	561·7	870·4
25	13·39	528·6	724·0	18·41	510·4	725·4	30·13	515·5	770·0	25 08·52	528·9	860·4
30	13·25	529·0	724·6	18·82	511·4	,,	30·05	514·7	770·6	25 04·12	531·8	853·8
35	13·25	529·0	725·7	19·39	510·9	721·7	30·22	523·6	768·9	25 01·58	529·0	845·0
40	13·12	528·5	726·4	19·51	511·5	,,	29·46	531·3	767·7	24 59·51	535·7	831·0
45	12·93	527·5	727·8	20·00	511·8	720·4	28·08	521·7	775·8	25 03·81	530·0	829·3
50	12·75	526·7	728·8	20·72	512·5	,,	27·61	517·5	779·8	25 07·52	526·0	825·8
55	12·42	526·6	,,	20·96	512·8	719·1	26·25	514·5	781·7	25 10·48	519·8	824·6
		20h.			0h.			4h.			8h.	
0	25 12·40	526·1	730·3	25 21·24	511·9	718·5	25 25·47	515·1	781·0	25 12·13	517·3	822·1
5	12·20	526·4	731·7	21·79	511·0	,,	24·28	518·3	778·4	14·33	513·6	819·5
10	12·40	526·1	732·1	21·88	511·2	717·3	23·52	523·3	772·8	15·02	507·9	822·6
15	12·18	526·1	,,	22·22	511·3	,,	22·91	527·3	769·0	12·69	510·2	823·5
20	12·42	524·8	,,	22·91	510·3	716·0	23·41	535·7	765·5	11·71	515·9	821·9
25	12·11	524·5	732·9	23·41	509·1	,,	23·75	541·6	761·1	12·76	520·9	813·2
30	12·04	523·9	,,	22·82	511·4	713·6	22·98	541·8	759·7	14·60	522·1	811·5
35	11·88	524·5	,,	23·66	511·6	,,	22·87	541·2	759·5	16·35	520·2	805·9
40	11·86	524·0	,,	23·56	513·6	712·7	23·56	549·1	756·5	17·58	518·2	800·2
45	11·48	524·3	730·8	24·19	510·6	,,	24·15	552·1	754·8	17·34	519·0	796·3
50	12·23	524·2	,,	23·92	513·9	713·2	23·58	548·7	756·6	17·37	521·2	790·9
55	12·43	523·7	730·5	24·15	516·5	,,	23·68	549·5	756·6	17·40	524·3	786·6
		21h.			1h.			5h.			9h.	
0	25 12·55	523·5	728·0	25 24·89	524·3	713·6	25 23·65	546·9	757·7	25 17·65	524·0	780·3
5	12·69	522·8	729·7	25·43	522·5	714·9	24·91	553·1	757·7	18·13	525·4	776·0
10	12·75	521·8	729·0	25·83	525·8	716·7	25·76	558·2	757·2	18·18	525·1	773·8
15	12·53	521·4	728·0	26·11	528·1	718·4	26·13	558·3	760·1	18·28	524·4	,,
20	12·25	521·2	730·9	26·87	531·5	719·1	26·16	559·5	762·8	18·40	524·2	769·9
25	11·91	521·3	,,	26·84	532·3	719·2	26·16	561·5	766·1	18·43	524·1	768·5
30	12·02	521·5	731·0	27·58	532·1	723·1	25·73	560·8	772·5	18·38	524·7	764·9
35	12·38	521·1	,,	27·21	528·7	724·9	25·46	556·3	783·8	18·57	524·5	762·5
40	12·62	520·3	731·8	26·85	523·3	728·8	24·15	545·1	796·3	18·74	524·3	760·8
45	12·75	519·8	,,	27·01	517·2	732·3	23·56	540·2	805·0	18·84	524·1	759·0
50	12·70	519·7	726·3	26·38	511·8	735·9	24·32	534·1	813·3	18·70	524·1	755·5
55	12·72	520·3	,,	26·63	505·3	733·9	24·30	528·1	817·9	18·61	525·6	750·2

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·0000085.

The temperature of the bifilar and balance magnets, and the observers' initials will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

April 25d 7h 0m—30m. See Extra Observations of Magnetometers for some additional observations made at this time.

Göttingen Mean Time of Declination Observation.	MAY 24, 25.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		10h.			14h.			18h.			22h.	
0	25 19·48	534·0	694·1	25 14·73	521·2	667·4	25 13·56	522·6	693·7	25 14·98	516·2	699·2
5	19·46	531·4	690·3	14·75	521·9	,,	13·32	522·7	695·3	14·62	516·2	,,
10	18·84	530·7	686·6	15·85	522·0	,,	13·42	526·8	697·3	14·80	516·5	697·9
15	18·95	528·1	685·0	16·06	522·2	661·9	13·52	525·1	699·0	14·24	516·2	697·1
20	18·28	525·4	683·5	16·65	522·7	660·9	13·57	523·9	700·6	15·38	516·3	696·3
25	16·75	525·6	684·3	16·80	523·4	659·0	13·56	524·5	700·4	15·47	516·1	696·4
30	15·34	530·3	683·2	16·33	524·2	657·2	13·36	525·6	,,	15·91	514·9	696·7
35	15·41	534·0	683·9	15·64	524·1	657·4	13·19	524·8	700·8	15·81	514·6	,,
40	16·06	532·3	684·8	15·11	523·0	657·8	13·14	524·7	701·1	16·05	515·0	697·4
45	15·69	530·2	685·3	14·64	523·3	,,	13·25	524·7	702·3	16·28	514·3	,,
50	14·87	530·6	,,	15·39	523·6	657·1	13·29	524·4	703·8	16·06	514·6	698·0
55	14·53	531·0	,,	15·65	522·4	655·7	13·43	523·8	704·1	16·16	514·7	,,
		11h.			15h.			19h.			23h.	
0	25 14·75	532·1	685·2	25 16·13	521·6	,,	25 13·07	519·8	704·1	25 16·28	514·0	699·0
5	15·51	530·3	685·2	16·84	519·2	655·2	13·16	519·8	705·9	16·89	514·4	,,
10	15·78	529·3	686·1	17·00	519·5	,,	13·44	519·7	706·7	17·36	515·2	698·3
15	16·45	526·8	687·7	17·00	519·6	654·6	13·49	519·9	707·0	17·39	516·2	,,
20	16·15	525·1	,,	16·68	521·8	654·3	13·36	518·5	707·7	17·54	516·2	698·0
25	15·54	524·0	686·4	16·36	522·4	,,	13·07	519·0	707·7	17·98	517·5	696·7
30	14·89	525·7	687·4	16·36	519·3	654·1	12·55	519·5	707·7	17·53	518·9	695·6
35	15·01	524·9	688·1	15·94	520·0	658·5	12·89	518·7	707·7	18·03	518·3	,,
40	15·38	525·3	688·2	16·06	519·8	660·7	12·70	518·0	707·9	18·10	518·1	696·6
45	16·01	524·8	689·0	16·19	521·3	660·8	12·78	517·6	708·4	18·48	519·5	,,
50	16·33	526·3	687·6	16·70	522·4	665·4	13·05	519·7	708·4	18·84	516·0	693·3
55	17·04	525·6	685·8	16·35	523·7	,,	13·09	515·8	709·0	18·87	521·8	693·7
		12h.			16h.			20h.			0h.	
0	25 16·97	524·3	686·2	25 16·53	524·5	,,	25 12·90	516·7	708·8	25 19·44	522·8	690·7
5	17·36	524·4	684·2	16·72	525·3	665·3	12·65	517·5	,,	19·28	522·0	,,
10	17·42	524·6	677·7	16·97	524·6	,,	12·69	517·4	707·8	19·55	521·9	693·6
15	17·60	524·0	672·8	16·63	524·2	664·6	12·40	517·5	708·2	19·53	520·1	,,
20	19·05	519·4	675·3	16·01	524·9	668·6	12·80	517·1	708·2	20·11	522·2	692·8
25	19·41	516·6	673·7	15·18	525·3	667·1	13·05	517·2	708·1	20·16	525·1	,,
30	19·37	517·0	671·3	14·58	524·9	668·0	13·39	516·3	708·7	20·72	526·0	692·9
35	18·20	518·7	669·5	14·13	524·7	674·8	12·90	515·8	708·7	20·90	528·4	690·9
40	17·46	519·1	666·6	13·76	524·6	675·3	12·80	515·1	708·7	21·17	526·6	,,
45	16·60	521·5	664·8	13·47	524·8	674·0	12·75	515·8	709·3	21·48	524·2	692·0
50	16·13	525·3	661·7	13·76	524·4	677·4	12·85	516·4	709·0	20·77	524·8	,,
55	15·36	529·3	659·2	13·81	524·9	,,	13·32	516·4	,,	21·06	528·4	689·4
		13h.			17h.			21h.			1h.	
0	25 15·42	528·8	659·9	25 14·40	524·8	677·8	25 12·83	516·1	707·2	25 21·37	529·6	689·0
5	15·11	530·1	,,	14·01	525·1	680·7	13·90	515·7	706·7	21·46	527·5	688·7
10	15·69	527·9	659·7	13·79	525·1	,,	13·59	516·0	704·3	20·85	524·2	689·6
15	15·17	526·2	659·8	13·32	524·7	682·5	12·89	513·5	,,	20·80	526·9	688·2
20	14·96	524·6	660·5	13·63	524·6	681·2	12·76	513·8	703·2	20·92	525·3	690·7
25	14·24	523·6	661·4	14·08	524·6	681·9	13·96	514·1	,,	20·52	526·3	690·3
30	13·94	522·5	663·7	14·17	524·4	,,	14·21	515·0	703·8	20·83	529·2	,,
35	14·15	521·7	665·4	13·56	524·2	679·7	14·28	515·1	,,	20·69	529·2	,,
40	14·10	520·9	667·2	13·56	523·8	679·9	14·58	515·3	701·5	20·97	530·4	691·4
45	14·35	521·2	668·7	14·11	522·9	682·4	14·73	515·7	,,	20·32	534·4	691·5
50	14·33	521·5	669·1	13·99	523·0	685·6	14·75	515·7	699·5	20·83	533·4	694·1
55	14·82	520·7	,,	13·67	522·6	689·3	14·60	516·2	,,	20·74	532·6	697·9

BIFILAR. Observed 2m after the Declination, k=0·000140. BALANCE. Observed 3m after the Declination, k=0·0000085.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

Göttingen Mean Time of Declination Observation.	May 24, 25.						June 19, 20.					
	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		2^h.			6^h.			10^h.			14^h.	
0	25 20·35	534·0	696·2	25 19·39	538·4	711·1	25 17·49	535·6	702·1	25 14·80	529·5	696·7
5	21·44	534·9	697·3	19·39	537·7	,,	16·80	533·1	701·7	15·09	529·6	,,
10	21·34	532·6	699·8	19·55	539·8	708·8	16·45	533·7	,,	15·05	529·1	696·7
15	20·96	531·9	700·3	19·51	540·3	707·9	16·28	533·9	701·6	14·94	528·7	,,
20	21·26	531·9	700·6	19·22	537·5	,,	16·43	535·3	701·4	14·60	529·4	695·7
25	21·10	531·8	700·4	19·14	539·1	707·1	16·82	535·3	702·5	14·40	530·6	695·1
30	21·48	532·4	700·5	19·42	540·0	705·1	16·99	534·8	702·7	14·37	529·0	,,
35	21·43	533·6	700·9	18·97	537·4	,,	17·33	533·8	,,	13·94	528·7	696·0
40	21·44	533·2	701·7	19·10	539·7	704·7	16·97	533·2	700·7	13·81	529·1	695·0
45	21·46	532·5	702·9	18·90	541·1	,,	16·80	533·7	700·6	13·59	529·2	695·4
50	21·48	533·5	702·9	18·90	542·2	703·4	16·95	533·2	699·9	14·10	529·1	,,
55	21·46	533·5	702·8	18·84	543·7	,,	16·89	533·0	700·6	14·08	530·5	694·4
		3^h.			7^h.			11^h.			15^h.	
0	25 21·84	534·8	701·6	25 18·84	540·8	705·3	25 16·82	533·2	699·9	25 14·24	530·0	,,
5	21·43	534·2	701·9	18·63	536·6	708·0	16·75	533·8	699·7	13·39	529·4	694·6
10	21·51	532·9	702·0	18·34	533·8	707·8	16·89	534·5	698·8	14·13	528·6	696·5
15	21·66	534·5	701·7	17·98	537·7	706·0	17·02	534·2	698·5	14·08	529·7	695·6
20	21·59	533·1	701·6	18·10	540·5	707·7	17·02	533·9	,,	14·21	529·1	,,
25	21·53	533·2	702·1	18·41	540·3	708·1	17·22	533·8	697·7	14·41	529·5	694·8
30	21·50	533·9	702·6	18·58	539·8	709·7	17·09	533·3	,,	14·37	529·1	694·7
35	21·17	532·2	704·1	18·60	542·1	709·1	17·07	532·8	,,	14·31	529·4	695·1
40	20·69	526·3	706·8	18·75	548·8	707·3	16·82	532·3	697·2	14·73	529·0	,,
45	20·69	525·5	708·9	18·74	545·1	709·9	16·63	531·9	,,	15·05	528·3	694·7
50	20·69	527·4	709·3	18·40	546·5	709·3	16·65	532·8	697·0	14·62	528·9	,,
55	20·79	530·2	707·9	18·94	546·4	710·6	16·25	533·4	695·9	14·65	528·0	698·6
		4^h.			8^h.			12^h.			16^h.	
0	25 20·35	534·4	707·9	25 19·01	544·0	712·3	25 16·57	533·9	695·9	25 14·94	528·0	701·5
5	20·30	535·2	706·9	18·90	543·5	713·8	16·95	532·8	,,	15·07	528·5	706·3
10	20·43	536·7	706·7	18·84	542·8	714·3	16·95	531·8	697·0	15·01	528·8	702·9
15	20·35	536·9	,,	18·63	542·8	714·7	16·65	531·3	697·0	15·04	528·9	695·5
20	20·00	535·1	708·7	18·37	542·8	715·4	16·15	531·1	,,	14·68	529·1	699·8
25	19·75	534·9	709·2	18·18	543·8	715·7	16·55	531·8	,,	14·31	529·8	706·8
30	19·69	537·3	709·7	17·93	543·3	716·5	16·48	531·1	698·1	14·20	529·2	707·6
35	19·66	534·1	711·7	17·44	541·6	717·1	16·28	531·0	698·0	14·17	529·3	706·1
40	19·98	535·6	710·7	16·75	540·8	716·9	16·28	532·7	696·5	14·35	529·3	699·2
45	19·81	534·7	,,	15·79	537·2	720·2	16·68	531·4	,,	14·11	529·5	697·7
50	20·11	534·2	712·0	13·77	528·9	,,	16·15	531·1	696·5	14·44	529·9	,,
55	19·89	534·8	712·5	08·53	539·3	721·9	15·65	530·6	696·6	14·64	529·4	691·6
		5^h.			9^h.			13^h.			17^h.	
0	25 19·89	536·0	712·1	25 04·82	549·1	714·7	25 15·44	530·2	696·2	25 14·37	529·8	688·9
5	19·64	536·8	,,	04·34	558·8	712·9	15·38	530·4	696·3	13·90	529·3	696·5
10	19·59	536·2	712·0	08·11	553·9	715·6	15·64	529·9	6967	13·83	529·3	701·8
15	19·56	535·9	713·8	09·86	547·8	716·3	15·61	530·2	,,	13·50	528·7	705·4
20	19·44	535·5	,,	10·51	544·8	714·6	15·85	529·6	696·7	13·19	528·8	711·2
25	19·51	535·1	713·9	11·42	544·3	712·7	15·52	528·8	696·5	13·00	529·1	703·7
30	19·51	538·4	,,	12·78	540·8	,,	15·34	528·6	697·7	12·69	529·1	700·3
35	19·79	540·8	711·9	13·50	540·0	709·7	15·59	528·6	697·9	12·63	529·1	696·4
40	20·02	541·6	711·0	14·35	539·1	708·2	15·39	528·7	697·4	12·58	528·6	705·1
45	19·88	540·1	712·5	15·44	535·0	708·0	15·05	528·4	697·6	12·40	528·3	710·1
50	19·81	539·2	711·9	15·58	534·3	706·3	14·80	529·0	,,	12·06	528·1	718·3
55	19·12	536·2	,,	15·85	534·2	704·3	14·80	528·9	,,	12·09	528·0	715·0

BIFILAR. Observed 2^m after the Declination, k=0·000140. BALANCE. Observed 3^m after the Declination, k=0·0000085.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

Göttingen Mean Time of Declination Observation.	JUNE 19, 20.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		18^{h}.			22^{h}.			2^{h}			6^{h}.	
0	25 12·01	527·2	716·9	23 13·81	516·3	694·0	25 22·47	531·7	691·5	25 16·95	541·8	698·4
5	12·13	527·2	711·4	14·11	516·7	,,	22·40	531·8	,,	16·60	542·0	697·8
10	11·89	526·6	719·0	14·50	516·3	693·4	22·45	531·7	692·1	16·41	542·4	697·2
15	11·51	526·5	713·9	14·51	517·1	692·1	22·30	532·4	691·4	16·28	542·6	,,
20	11·49	526·0	715·7	14·82	516·4	692·1	22·33	533·0	691·2	16·35	543·7	696·9
25	11·75	526·1	718·4	15·07	515·8	691·6	22·30	533·6	690·3	16·39	543·6	694·9
30	11·89	526·3	709·4	15·32	515·7	,,	22·37	533·7	690·7	16·50	543·5	,,
35	12·28	526·1	697·6	15·38	515·5	691·3	22·50	534·4	,,	16·43	543·1	696·1
40	12·46	525·1	704·7	15·47	515·5	,,	22·53	535·6	,,	16·73	542·9	696·9
45	12·25	524·4	704·9	15·94	514·5	690·8	22·51	535·8	,,	16·57	542·2	,,
50	12·38	524·0	705·6	16·35	514·5	689·1	22·45	536·0	,,	16·39	541·0	,,
55	12·06	524·0	705·4	16·43	514·5	,,	22·30	536·5	692·0	16·70	543·6	697·8
		19^{h}.			23^{h}.			3^{h}.			7^{h}.	
0	25 12·01	524·1	705·4	25 16·30	515·3	687·9	25 22·27	536·3	693·1	25 16·63	545·2	,,
5	12·56	524·9	705·3	16·68	517·2	687·7	22·33	537·4	,,	16·82	542·6	699·1
10	12·85	524·6	709·7	16·43	517·7	,,	22·50	537·0	,,	16·82	543·5	699·6
15	12·69	523·7	703·9	16·84	517·6	689·2	22·57	537·3	,,	17·20	542·4	,,
20	12·69	523·3	706·9	17·47	518·1	,,	22·53	538·4	693·1	17·19	542·1	701·0
25	12·70	524·0	707·2	17·81	518·5	688·3	22·72	539·9	693·4	17·46	543·4	700·9
30	12·92	523·6	697·6	18·03	518·0	,,	22·50	539·8	,,	17·63	541·4	700·5
35	13·30	523·8	697·2	17·96	518·9	688·4	22·35	538·5	,,	17·67	544·5	699·9
40	13·36	522·5	698·4	18·30	518·7	,,	22·45	538·2	695·7	17·46	543·8	698·8
45	13·32	522·9	705·6	18·81	519·7	689·1	22·24	537·9	696·7	17·49	543·2	,,
50	13·16	523·2	701·0	18·97	518·7	690·8	22·24	538·2	697·2	17·70	543·5	698·3
55	13·03	522·8	696·5	19·32	518·4	690·9	22·04	539·2	,,	17·58	542·8	,,
		20^{h}.			0^{h}.			4^{h}.			8^{h}.	
0	25 13·29	522·6	704·8	25 19·51	519·4	691·5	25 22·37	538·3	695·8	25 18·16	544·5	697·2
5	13·41	522·9	704·6	20·15	520·9	691·7	21·37	537·1	697·7	18·30	545·5	694·0
10	13·39	522·7	698·6	20·33	521·2	691·4	21·21	537·7	,,	17·09	542·3	695·2
15	13·64	522·3	695·5	20·69	522·1	691·4	20·56	537·3	699·1	17·20	541·6	697·0
20	13·56	522·7	692·6	20·69	523·0	690·3	20·87	538·9	,,	17·36	541·9	696·8
25	13·46	521·3	701·1	20·79	522·9	690·3	20·70	540·1	699·2	17·61	544·5	695·8
30	13·43	521·6	709·7	20·80	523·8	689·7	20·42	541·0	,,	17·47	543·3	,,
35	13·52	522·0	711·8	20·77	520·6	691·0	20·22	542·0	699·8	17·39	543·9	694·8
40	13·69	521·8	708·3	21·34	524·2	688·7	20·02	543·9	,,	17·46	545·0	692·6
45	13·54	521·8	706·0	21·59	527·5	687·9	19·95	546·4	698·5	16·97	543·0	693·8
50	13·61	521·7	698·1	22·13	529·2	688·1	19·48	544·9	,,	16·95	543·4	693·5
55	13·72	520·8	690·1	22·33	526·8	689·2	19·29	543·4	699·2	16·89	543·5	,,
		21^{h}.			1^{h}.			5^{h}.			9^{h}.	
0	25 13·47	520·4	698·1	25 21·53	527·8	689·3	25 19·14	542·6	699·5	25 16·73	543·4	,,
5	13·57	520·5	698·5	22·17	528·5	,,	18·82	541·7	,,	16·87	544·2	693·8
10	13·41	519·8	697·4	22·24	525·7	691·8	18·79	541·8	,,	16·43	539·8	695·2
15	13·72	519·1	697·6	22·25	525·7	,,	18·43	541·4	700·1	16·35	539·7	695·9
20	13·36	519·2	697·7	22·20	524·5	692·9	18·16	541·4	,,	16·90	542·8	694·8
25	13·14	519·5	697·2	22·44	525·8	692·4	18·16	541·1	,,	16·82	544·5	691·7
30	13·25	519·0	696·4	22·44	526·8	691·7	18·10	541·4	700·8	16·89	541·5	692·6
35	13·27	518·5	695·5	22·47	528·5	691·3	17·86	541·7	,,	15·88	544·5	690·6
40	12·90	518·1	693·7	22·31	529·3	691·0	17·56	540·9	,,	15·32	544·0	689·3
45	13·23	519·2	693·5	22·38	531·1	691·2	17·56	541·2	,,	14·77	546·5	685·7
50	13·52	518·5	,,	22·53	530·7	691·4	17·44	540·2	699·5	13·99	549·6	682·8
55	14·06	518·1	693·5	22·45	530·4	692·0	17·37	540·1	,,	14·03	550·9	680·5

BIFILAR. Observed 2^{m} after the Declination, $k=0{\cdot}000140$. BALANCE. Observed 3^{m} after the Declination, $k=0{\cdot}0000085$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

JULY 24, 25.

Göttingen Mean Time of Declination Observation.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		10h.			14h.			18h.			22h.	
0	25 15·78	539·0	655·4	25 13·93	540·6	,,	25 08·31	539·3	644·9	25 20·02	525·1	597·0
5	15·86	538·4	655·9	13·46	540·9	646·8	09·53	538·2	628·7	24·99	529·6	597·7
10	16·08	537·6	657·2	13·46	541·2	,,	11·82	541·0	619·9	26·37	531·7	594·9
15	16·01	537·2	657·7	13·32	541·0	646·8	12·89	539·6	619·8	25·53	535·3	592·4
20	16·26	537·5	657·4	13·25	541·7	647·7	13·29	537·7	634·4	23·41	533·3	592·4
25	15·94	537·5	657·7	13·52	541·6	,,	11·98	539·7	639·5	23·09	536·8	593·1
30	15·88	537·1	658·4	13·32	542·8	646·9	13·07	541·4	629·9	21·39	530·9	597·3
35	15·62	536·7	658·7	13·34	543·5	,,	12·80	539·9	621·6	18·25	529·0	594·9
40	15·69	536·7	658·4	13·49	538·9	648·5	13·07	543·3	......	19·42	529·8	596·9
45	15·71	536·7	659·1	12·29	538·1	647·7	....	......	......	18·63	530·8	600·1
50	15·86	536·8	658·6	10·95	538·3	649·7	14·80	541·5	......	18·45	530·1	601·5
55	15·74	536·9	657·7	10·27	539·5	,,	14·36	541·9	608·5	19·51	532·3	605·1
		11h.			15h.			19h.			23h.	
0	25 15·69	536·5	657·8	25 10·95	540·5	,,	25 13·02	538·2	611·8	25 19·12	529·7	599·9
5	15·79	536·8	657·3	11·07	540·7	649·0	12·73	537·6	614·5	18·75	529·2	601·4
10	15·78	536·5	,,	11·08	541·8	,,	13·76	538·1	615·8	17·40	530·0	,,
15	15·98	537·4	657·0	10·97	540·4	,,	14·64	539·9	613·9	18·38	529·6	603·1
20	15·64	535·8	,,	11·81	543·1	,,	15·05	538·9	615·1	19·96	527·0	609·5
25	15·83	536·7	,,	12·82	545·3	646·2	14·38	532·7	620·5	19·76	528·3	610·0
30	15·51	536·1	,,	12·96	543·7	,,	14·38	528·1	616·2	20·47	529·7	613·3
35	15·56	535·9	656·3	12·80	543·0	645·0	15·12	526·8	618·7	21·59	526·5	615·2
40	15·99	536·0	,,	12·11	545·8	,,	16·12	526·1	621·6	21·84	521·9	617·5
45	15·85	536·0	656·4	11·69	544·5	642·8	15·69	525·8	623·0	24·06	529·4	615·7
50	15·61	536·0	,,	10·77	542·6	,,	17·44	526·7	621·6	24·60	529·4	,,
55	15·54	535·8	,,	10·83	540·8	645·9	14·68	520·1	626·7	25·09	529·4	613·2
		12h.			16h.			20h.			0h.	
0	25 15·47	535·6	655·9	25 10·11	539·8	,,	25 16·36	519·0	629·4	25 22·37	533·3	604·1
5	15·34	534·8	,,	09·56	538·5	646·9	16·79	513·2	631·1	22·51	532·3	607·1
10	15·41	534·8	,,	09·46	539·3	,,	16·73	518·8	630·0	24·42	526·2	612·3
15	15·24	534·7	,,	09·40	539·4	,,	20·02	530·8	623·2	25·34	528·4	614·6
20	15·09	535·2	657·6	10·23	539·3	648·0	23·27	533·7	617·0	26·20	523·8	616·7
25	15·42	534·9	657·2	10·50	541·1	,,	22·98	530·5	614·2	26·05	519·9	616·9
30	15·31	535·0	,,	10·74	542·5	,,	22·78	529·1	609·6	26·40	523·6	,,
35	15·17	535·2	,,	11·27	543·1	645·0	21·37	521·4	610·8	27·61	526·9	617·1
40	15·01	535·7	656·6	10·80	544·9	,,	21·41	524·1	605·9	28·83	521·4	621·3
45	14·99	535·5	,,	10·92	546·4	644·1	22·74	533·0	600·1	28·01	519·7	625·1
50	14·94	535·3	,,	11·17	545·6	,,	23·79	540·7	595·4	27·58	517·2	,,
55	15·01	535·3	656·5	10·88	546·0	,,	23·88	539·0	591·7	27·88	521·3	625·0
		13h.			17h.			21h.			1h.	
0	25 14·80	534·9	655·0	25 10·90	545·6	,,	25 23·83	546·1	585·8	25 27·58	524·7	624·4
5	14·80	534·8	,,	10·11	549·0	642·6	25·46	542·9	587·9	27·53	527·0	627·1
10	14·80	534·4	,,	11·81	543·0	643·2	25·61	538·1	588·5	28·58	528·8	628·9
15	14·77	550·4	648·4	11·25	540·3	643·4	24·80	532·4	588·1	28·42	539·1	628·8
20	16·05	542·1	648·5	09·39	541·9	643·7	25·24	530·9	589·4	26·68	534·1	632·4
25	15·22	539·8	649·1	10·68	542·2	641·5	23·68	535·2	584·5	25·63	532·9	637·6
30	14·18	539·1	648·5	10·00	547·7	645·0	25·36	536·7	585·9	24·82	531·0	642·6
35	14·08	539·4	,,	07·94	545·5	638·3	25·74	539·9	586·1	24·08	532·0	645·4
40	14·08	538·9	648·9	11·89	546·2	640·7	23·27	530·4	587·7	23·65	527·9	651·3
45	13·88	539·6	648·0	15·44	540·3	640·7	22·74	528·9	589·9	24·15	528·9	654·7
50	13·83	540·8	,,	08·52	538·1	642·0	19·48	522·5	593·0	24·10	519·7	660·3
55	13·84	540·7	,,	07·60	538·3	646·0	19·32	516·4	595·3	24·42	518·8	661·9

BIFILAR. Observed 2m after the Declination, $k=0·000140$. BALANCE. Observed 3m after the Declination, $k=0·0000085$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas („) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

July 24d 18h 10m. A minute insect was seen creeping over the west cross-plate of the balance magnet, which, perhaps, has caused some motion in the needle? At 18h 45m the box was lifted from the instrument and the insect was removed.

Göttingen Mean Time of Declination Observation.	July 24, 25.						August 30, 31.					
	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		2^h.			6^h.			10^h.			14^h.	
0	25 25·51	517·6	663·9	25 19·46	543·2	719·8	25 17·24	537·1	649·4	25 11·68	524·4	493·3
5	26·82	512·9	663·9	19·46	543·9	718·9	17·19	534·1	649·7	10·70	523·5	498·2
10	26·50	513·4	659·7	19·79	539·8	,,	16·57	535·6	648·1	09·56	521·1	496·9
15	25·85	514·6	656·5	19·55	542·0	716·4	15·58	535·5	647·2	06·37	529·2	501·4
20	25·49	519·3	653·0	19·58	546·0	714·4	15·76	535·9	647·0	05·58	532·7	507·3
25	24·99	524·9	650·6	20·50	546·6	,,	16·08	534·5	647·0	06·24	532·3	518·4
30	24·70	530·8	648·8	20·83	539·1	716·2	16·15	534·7	,,	06·57	532·5	528·3
35	24·46	535·0	647·2	20·09	533·9	,,	15·41	536·0	642·6	07·44	530·5	538·3
40	22·92	534·6	647·4	18·95	534·5	717·1	14·94	534·9	642·6	07·20	531·9	548·1
45	22·87	541·9	647·6	18·77	542·3	714·2	14·26	534·4	640·9	08·43	531·7	554·8
50	20·74	547·9	647·7	18·68	545·9	710·2	14·28	533·8	640·9	09·29	531·2	560·3
55	22·24	551·7	648·0	19·24	548·9	709·5	14·26	530·1	641·7	10·06	529·9	,,
		3^h.			7^h.			11^h.			15^h.	
0	25 21·68	540·7	656·9	25 20·23	544·4	710·0	25 14·06	534·5	638·3	25 10·45	527·5	570·1
5	20·77	535·2	662·9	20·35	545·8	,,	13·46	538·7	634·3	10·00	528·4	574·6
10	21·63	534·5	666·1	21·04	549·1	709·6	12·90	538·6	629·3	11·01	528·5	,,
15	22·08	538·0	663·5	20·18	548·0	,,	11·95	539·6	628·5	11·05	528·7	575·1
20	23·24	548·3	662·9	18·84	546·0	709·1	11·66	539·1	626·2	10·51	528·2	577·4
25	22·96	550·5	664·7	18·21	545·5	712·7	11·41	539·3	625·6	09·89	528·0	579·7
30	22·98	551·7	664·9	17·94	537·0	719·7	10·97	540·7	624·0	09·33	529·3	584·0
35	22·77	550·3	669·3	15·67	532·5	724·2	11·68	542·3	621·4	09·62	529·9	,,
40	22·28	546·2	673·6	14·24	532·1	728·1	12·82	539·6	620·3	09·47	530·0	591·5
45	22·11	546·5	676·6	13·46	535·6	727·7	13·67	533·8	619·8	09·59	531·2	595·0
50	22·31	549·8	677·9	15·36	527·9	734·1	12·63	531·6	618·2	11·03	530·8	599·5
55	24·06	513·5	685·5	13·99	527·4	737·2	11·51	529·3	616·8	11·54	531·0	,,
		4^h.			8^h.			12^h.			16^h.	
0	25 24·50	526·8	694·9	25 08·09	533·5	731·2	25 10·30	527·8	616·9	25 11·27	531·6	601·5
5	25·02	523·1	698·9	04·93	550·6	717·7	10·06	527·3	618·8	11·19	530·2	605·4
10	24·35	528·0	696·8	08·08	558·9	708·2	11·39	528·1	618·1	10·65	532·7	,,
15	24·69	534·8	695·7	12·11	551·4	708·3	12·16	527·0	618·4	11·84	533·0	607·5
20	24·52	536·6	696·1	14·10	545·2	705·9	12·83	526·2	619·2	12·92	532·8	,,
25	23·70	534·5	698·9	13·67	547·5	697·1	13·63	528·0	618·2	13·39	535·0	604·1
30	23·22	528·5	700·9	14·58	549·4	694·6	14·89	528·8	614·7	12·60	536·9	601·5
35	23·68	528·9	700·0	16·73	544·5	691·7	15·05	526·8	612·9	11·54	537·2	599·5
40	23·78	525·5	700·5	17·53	538·0	687·6	14·80	524·8	609·2	11·44	535·4	600·8
45	23·54	527·2	699·7	16·06	533·9	,,	14·58	523·4	606·3	12·09	531·6	601·8
50	22·71	526·7	699·4	13·96	537·0	685·7	15·07	522·1	600·2	12·25	531·9	603·6
55	22·60	531·1	698·1	13·07	541·8	680·7	16·59	518·5	590·2	12·63	528·8	,,
		5^h.			9^h.			13^h.			17^h.	
0	25 21·24	536·7	696·7	25 13·22	545·0	675·9	25 21·12	524·9	572·8	25 12·62	530·5	,,
5	20·79	540·9	696·7	15·32	544·0	677·3	28·30	518·6	552·2	12·48	530·7	603·5
10	20·16	545·2	698·1	16·99	537·5	,,	32·02	509·5	523·5	12·85	528·4	605·1
15	19·79	547·0	699·5	16·03	535·8	,,	33·03	503·9	499·2	12·56	529·4	,,
20	19·44	550·4	701·8	14·68	538·2	675·3	30·94	497·6	478·6	13·36	528·3	604·9
25	18·14	549·7	706·2	14·71	541·9	672·2	26·99	489·5	462·7	13·39	528·2	605·3
30	17·15	546·2	712·4	15·94	543·1	671·5	22·13	493·3	454·7	14·64	528·1	,,
35	16·97	546·1	716·1	17·26	538·1	,,	18·50	502·8	,,	15·54	526·1	605·7
40	17·31	544·0	718·7	16·53	536·3	,,	14·78	509·0	458·3	18·23	525·5	,,
45	18·84	539·6	722·0	15·38	539·0	670·2	13·16	514·9	465·5	19·12	523·2	,,
50	18·72	537·0	722·5	15·62	540·6	666·9	13·00	520·4	474·8	20·27	519·7	603·6
55	19·02	537·9	722·3	15·67	540·7	,,	12·42	523·7	485·8	22·64	516·6	,,

BIFILAR. Observed 2^m after the Declination, k=0 000140. BALANCE. Observed 3^m after the Declination, k=0·0000085.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas („) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

AUGUST 30, 31.

Göttingen Mean Time of Declination Observation.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
	18h.			22h.			2h.			6h.		
0	25 24·57	512·1	603·6	25 17·76	507·6	620·4	25 26·14	527·5	653·9	25 17·37	535·8	660·0
5	25·43	510·1	,,	18·81	507·5	,,	27·04	534·9	651·4	17·42	535·6	660·3
10	25·67	512·2	596·7	20·27	506·4	622·3	28·18	538·2	650·4	17·21	536·5	658·2
15	25·06	516·5	,,	20·15	503·4	624·3	27·79	536·2	650·2	17·27	536·7	657·1
20	24·39	520·3	591·4	19·68	506·4	621·2	27·48	531·7	650·6	17·24	538·9	655·9
25	23·43	523·8	587·4	17·93	506·9	620·6	26·55	527·3	651·4	17·20	539·1	655·0
30	22·45	524·7	,,	18·00	506·6	620·8	25·96	524·5	652·1	17·06	538·8	654·8
35	22·25	524·7	588·5	17·06	506·0	622·3	25·43	526·8	651·3	16·95	538·1	654·8
40	21·48	525·3	,,	17·83	506·4	623·9	26·05	526·8	651·5	16·87	536·0	655·2
45	21·46	526·5	589·3	18·23	507·3	626·2	24·72	528·2	648·6	17·12	536·1	655·0
50	20·42	523·3	,,	18·77	508·2	627·4	25·20	527·5	648·5	17·09	536·9	654·7
55	17·60	525·9	590·0	19·61	511·0	628·8	24·84	527·3	649·3	16·99	537·4	654·4
	19h.			23h.			3h.			7h.		
0	25 15·76	525·2	593·3	25 20·25	512·1	629·6	25 24·75	526·2	649·9	25 16·79	537·0	654·7
5	13·49	527·0	,,	20·67	513·0	631·4	24·08	526·7	650·1	16·80	541·9	651·9
10	12·45	530·3	597·3	20·52	516·0	632·3	23·56	528·4	649·2	17·02	542·3	650·8
15	14·06	532·5	600·8	20·55	516·7	633·3	23·43	529·8	648·0	16·79	540·9	650·5
20	14·26	532·2	603·3	20·36	519·3	633·3	23·54	531·5	649·2	16·55	543·6	650·7
25	15·27	530·4	605·7	21·73	518·0	633·9	23·32	531·7	652·0	16·95	546·5	652·7
30	15·56	528·8	607·4	....	520·7	633·8	23·36	528·4	654·2	16·84	545·1	653·4
35	15·24	528·8	608·1	23·11	519·4	634·8	22·69	529·2	655·2	16·53	542·2	653·9
40	14·73	528·0	610·7	22·18	521·0	632·9	21·50	530·2	655·9	15·17	541·1	655·5
45	14·06	526·7	,,	23·12	522·0	632·9	20·74	537·5	655·0	14·17	540·4	657·2
50	15·47	526·5	614·8	23·78	518·5	635·2	20·00	537·0	657·4	13·20	537·9	660·8
55	15·54	522·4	618·0	23·34	516·6	633·4	19·64	541·8	657·4	11·48	536·8	663·3
	20h.			0h.			4h.			8h.		
0	25 14·43	523·4	618·7	25 23·65	517·9	635·0	25 19·73	544·4	,,	25 10·75	534·2	665·6
5	14·70	520·3	620·8	24·35	517·8	634·0	18·99	538·9	662·2	10·34	535·7	,,
10	13·32	521·6	,,	25·07	519·4	633·5	18·87	539·0	662·7	10·97	535·5	667·2
15	12·13	521·4	622·2	25·04	515·8	635·6	19·10	542·2	662·1	12·28	532·7	666·9
20	12·25	521·4	624·3	25·31	515·9	636·4	19·42	546·4	660·7	12·18	530·7	668·3
25	13·17	521·3	627·0	25·68	517·2	636·2	19·55	544·6	662·3	11·30	531·4	666·7
30	14·26	521·3	629·7	26·54	515·9	637·2	18·65	537·3	662·1	11·34	533·8	666·1
35	15·88	521·3	630·8	25·83	516·9	636·9	18·21	532·9	662·5	12·78	535·3	665·2
40	15·01	519·6	,,	25·54	516·0	637·2	18·55	529·1	663·1	14·50	535·5	663·4
45	14·99	520·9	,,	25·33	520·9	636·0	18·99	522·6	663·8	15·36	534·4	661·5
50	14·87	523·0	629·3	25·40	524·2	637·4	19·58	523·3	665·1	15·54	532·0	660·1
55	15·51	520·0	,,	25·40	527·8	637·4	19·24	522·3	663·4	15·24	531·5	658·9
	21h.			1h.			5h.			9h.		
0	25 14·53	518·1	630·2	25 26·01	528·0	,,	25 16·90	524·9	663·2	25 15·91	532·7	657·2
5	14·87	517·9	,,	26·16	527·6	641·8	15·99	532·3	661·5	16·23	532·3	654·9
10	15·54	513·5	630·8	25·68	527·0	,,	15·78	537·3	659·6	16·05	531·6	653·6
15	15·59	512·7	,,	25·90	531·8	643·9	16·43	545·0	657·6	15·92	531·6	651·2
20	15·41	514·1	629·5	26·55	531·4	646·9	16·35	541·1	658·2	16·72	532·5	649·5
25	16·82	516·3	,,	26·55	531·5	649·6	16·01	539·0	658·6	16·15	533·1	647·1
30	17·94	514·3	628·2	25·85	531·9	650·9	16·28	538·9	659·3	15·69	531·6	646·2
35	16·55	513·1	,,	26·27	536·1	,,	16·70	540·9	659·2	16·05	531·3	644·9
40	17·02	511·8	625·2	26·38	536·1	,,	17·09	538·7	659·6	15·39	531·4	642·8
45	16·79	512·4	,,	26·03	533·6	654·0	16·79	535·4	660·1	15·44	532·2	641·4
50	17·33	510·9	623·2	26·25	529·4	656·0	16·72	533·8	659·8	15·49	530·8	640·6
55	17·15	509·3	,,	26·61	528·0	655·6	17·37	536·5	658·3	15·27	531·3	638·9

BIFILAR. Observed 2^m after the Declination, $k=0{\cdot}000140$. BALANCE. Observed 3^m after the Declination, $k=0{\cdot}0000085$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

Göttingen Mean Time of Declination Observation.	September 18, 19.											
	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		10^h.			14^h.			18^h.			22^h.	
0	25 12·55	515·8	632·0	25 16·97	538·4	617 1	25 15·61	534·8	627·9	25 15·86	523·5	636·7
5	13·59	542·9	632·7	16·60	536·9	619·1	15·54	535·3	627·9	16·12	522·7	638·2
10	14·41	539·6	633·0	16·82	535·8	619·6	15·39	535·2	628·2	15·99	523·0	,,
15	14·87	537·7	634·6	16·82	535·9	618·6	15·17	535·6	,,	16·18	523·7	,,
20	15·59	535·4	632·8	16·63	536·1	617·3	15·07	531·2	,,	16·52	524·2	637·6
25	16·05	535·2	,,	16·12	535·8	617·2	15·07	536·1	629·0	16·77	524·8	,,
30	16·45	535·0	630·9	16·13	535·6	617·5	14·98	535·5	629·4	17·04	524·4	,,
35	16·82	535·4	,,	15·32	535·6	,,	14·84	535·8	630·1	17·65	524·6	639·0
40	16·92	535·3	628·5	15·27	534·8	,,	14·77	536·2	630·8	18·10	525·0	,,
45	16·95	536·1	,,	15·44	533·8	,,	15·07	535·7	631·4	18·20	523·2	,,
50	16·80	536·2	626·3	15·45	533·4	617·8	14·53	535·5	630·4	18·35	522·0	639·4
55	16·68	536·5	,,	15·64	533·4	,,	14·58	535·3	630·8	18·23	522·4	,,
		11^h.			15^h.			19^h.			23^h.	
0	25 16·72	537·4	,,	25 15·45	533·8	616·5	25 14·67	535·2	629·4	25 17·26	522·6	639·8
5	17·17	541·2	623·6	14·80	536·0	616·5	14·80	535·0	630·8	18·92	523·0	,,
10	17·71	542·1	623·5	14·38	537·6	615·3	14·35	534·5	630·6	18·99	521·4	,,
15	17·91	540·8	622·3	13·50	535·9	615·5	13·66	536·1	,,	18·90	519·8	639·8
20	17·65	539·4	621·5	13·12	533·9	616·0	14·28	537·5	,,	19·12	518·6	,,
25	17·13	538·5	620·0	12·35	531·9	616·7	15·02	536·3	630·7	19·61	519·5	,,
30	16·65	537·9	,,	11·59	531·2	619·0	15·32	535·1	631·3	20·23	520·2	638·8
35	16·25	536·3	621·1	12·35	531·9	621·0	15·36	534·3	,,	20·82	519·6	,,
40	15·83	536·9	,,	13·49	530·8	622·0	15·02	532·2	632·1	21·14	519·4	,,
45	15·98	536·8	,,	14·26	531·2	621·3	14·60	532·0	,,	21·51	518·9	637·8
50	15·89	534·7	623·4	14·64	531·6	,,	14·60	531·7	632·1	21·53	517·8	,,
55	16·05	535·2	,,	14·46	530·8	,,	14·80	530·9	,,	22·13	518·6	635·9
		12^h.			16^h.			20^h.			0^h.	
0	25 16·06	535·2	,,	25 14·30	531·6	621·3	25 14·67	530·9	634·5	25 22·24	516·3	636·1
5	16·12	535·2	622·6	14·26	532·3	,,	14·71	530·0	635·7	22·20	516·0	,,
10	16·26	537·2	,,	13·79	532·8	,,	14·75	528·3	635·2	22·84	515·6	,,
15	17·13	538·8	621·8	13·72	533·6	621·3	14·40	529·7	634·5	23·29	516·1	635·7
20	17·80	538·2	,,	13·49	534·0	621·4	14·43	529·2	634·5	23·70	518·0	,,
25	17·60	537·6	618·7	13·46	534·9	621·4	14·11	528·7	,,	23·66	516·4	634·9
30	17·22	538·4	618·3	13·69	535·3	,,	13·90	529·3	634·6	24·12	514·7	,,
35	17·61	538·1	,,	13·50	535·6	621·8	14·20	529·1	,,	24·22	515·5	634·6
40	17·84	537·1	,,	13·57	535·8	,,	14·40	528·7	,,	24·72	518·8	,,
45	17·51	537·1	616·9	13·39	535·5	621·8	14·08	528·0	,,	24·86	519·7	,,
50	17·12	536·8	619·6	13·46	536·2	621·7	14·37	528·3	635·1	24·89	518·7	631·7
55	16·50	536·5	617·7	13·83	535·9	622·8	14·30	526·8	,,	24·82	517·5	,,
		13^h.			17^h.			21^h.			1^h.	
0	25 16·12	536·4	,,	25 13·52	535·7	622·7	25 13·90	527·1	634·6	25 24·75	517·5	631·6
5	15·32	536·5	,,	13·49	536·4	,,	13·74	527·6	,,	24·89	518·8	,,
10	14·85	536·3	,,	13·88	536·5	624·0	13·74	527·6	,,	24·89	521·4	,,
15	14·48	536·4	617·9	14·08	536·5	624·2	14·18	528·0	,,	25·38	523·4	631·4
20	14·60	536·2	,,	14·30	535·9	624·3	13·79	528·4	634·0	25·33	522·9	,,
25	14·91	536·4	618·6	14·46	554·8	624·8	15·32	527·4	,,	25·04	523·4	631·2
30	15·07	536·1	620·2	14·60	535·5	625·3	15·79	525·6	636·2	25·19	523·2	,,
35	15·20	536·1	,,	15·07	533·9	626·4	15·71	524·3	637·2	24·87	524·1	,,
40	15·65	537·1	,,	15·45	533·1	627·2	15·58	524·0	636·9	24·91	523·5	633·3
45	16·77	538·7	619·8	15·34	533·1	627·4	15·54	524·4	,,	24·86	521·2	,,
50	17·09	538·8	,,	15·24	533·9	627·4	15·81	524·3	637·3	24·28	519·1	,,
55	17·33	539·5	617·8	15·44	534·9	627·4	15·89	523·7	,,	24·30	519·1	,,

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0·0000085$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

Göttingen Mean Time of Declination Observation.	September 18, 19.						October 23, 24.					
	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		2h.			6h.			10h.			14h.	
0	25 24·05	518·6	637·5	25 17·40	540·2	638·4	25 09·00	535·3	628·8	25 12·67	532·0	,,
5	23·72	518·4	,,	17·39	540·2	,,	08·92	535·1	,,	13·10	528·8	570·9
10	23·63	516·6	,,	17·39	540·2	,,	09·46	533·1	,,	12·75	527·5	,,
15	23·52	518·8	640·2	17·34	540·0	636·9	09·54	530·2	628·4	12·15	527·7	573·4
20	23·48	518·2	,,	16·89	540·4	,,	08·95	529·0	,,	12·06	527·2	,,
25	23·01	518·1	642·5	16·89	540·3	,,	08·63	528·9	,,	11·77	527·7	575·8
30	22·82	520·4	,,	16·97	540·4	,,	08·73	529·3	,,	11·34	527·6	,,
35	22·89	523·9	,,	16·89	540·7	636·0	09·12	530·1	627·9	11·37	527·8	577·3
40	22·80	526·3	642·8	16·89	541·3	,,	10·18	530·2	,,	11·71	529·4	,,
45	22·28	527·3	,,	16·86	541·5	,,	11·07	527·5	,,	12·13	530·8	578·0
50	22·20	529·3	,,	16·82	541·5	635·2	12·06	525·1	,,	12·60	532·0	,,
55	22·17	531·3	,,	16·82	541·5	,,	12·75	525·9	625·9	12·31	532·6	,,
		3h.			7h.			11h.			15h.	
0	25 21·54	530·6	644·5	25 16·82	541·1	634·8	25 13·52	527·1	,,	25 11·96	533·4	,,
5	21·57	532·5	,,	16·62	541·5	,,	13·09	529·5	618·7	11·72	533·2	,,
10	21·44	533·5	645·2	15·72	542·2	,,	13·43	532·4	615·4	11·42	532·5	580·4
15	21·54	534·8	,,	16·21	543·3	634·2	12·93	531·8	611·7	11·32	532·2	581·1
20	21·43	532·5	645·6	16·16	543·5	,,	12·16	534·4	607·0	11·05	531·7	,,
25	21·76	533·8	,,	16·21	543·4	,,	10·74	532·3	603·9	10·83	531·5	583·1
30	21·70	533·0	645·8	16·10	542·6	633·5	10·09	531·2	603·3	10·90	531·5	,,
35	21·71	534·9	,,	16·26	541·6	,,	08·83	530·0	600·1	11·22	530·8	585·7
40	21·66	535·4	644·0	16·21	540·3	633·1	07·40	529·7	598·0	11·71	530·9	,,
45	21·59	535·2	,,	16·57	540·0	,,	07·05	531·2	597·3	11·84	531·5	587·0
50	21·46	534·7	644·1	16·57	543·2	,,	08·99	530·1	,,	12·02	531·2	,,
55	21·26	535·5	,,	16·39	542·8	,,	11·62	525·9	596·7	12·04	532·1	,,
		4h.			8h.			12h.			16h.	
0	25 21·29	535·0	643·8	25 16·48	542·6	632·4	25 12·33	523·0	593·7	25 12·60	532·5	588·5
5	20·82	535·3	,,	16·32	541·0	632·4	12·45	523·3	589·4	12·78	532·7	,,
10	20·74	536·4	644·1	16·08	542·4	633·0	12·20	523·3	586·3	13·14	532·7	589·6
15	20·82	535·6	,,	15·94	540·9	634·1	14·13	522·4	,,	13·56	532·5	,,
20	20·76	536·2	644·7	15·71	539·8	635·1	15·11	522·2	,,	13·44	533·6	590·0
25	20·67	536·2	,,	15·71	539·5	635·6	16·50	524·3	,,	13·91	533·5	,,
30	20·22	534·7	644·9	12·95	533·9	636·0	17·31	526·9	583·2	13·83	533·1	,,
35	20·13	534·7	644·3	08·80	529·5	639·3	18·48	531·4	580·5	13·50	533·4	591·5
40	19·98	535·4	643·6	04·55	529·3	642·5	19·34	532·0	576·5	13·36	533·9	,,
45	19·66	535·0	643·1	00·96	534·4	643·7	18·52	533·7	572·8	13·17	534·2	,,
50	19·46	535·7	642·1	00·58	542·0	643·9	16·87	531·3	569·9	12·85	534·2	591·7
55	19·28	536·7	641·5	02·66	546·0	643·9	14·60	531·7	569·0	13·05	534·1	,,
		5h.			9h.			13h.			17h.	
0	25 18·92	537·1	640·0	25 05·03	543·8	644·1	25 13·52	530·4	569·1	25 12·69	534·0	,,
5	18·81	537·9	641·0	06·71	542·3	643·0	12·78	530·0	,,	12·69	534·6	594·6
10	18·81	537·8	640·9	08·85	540·3	640·9	12·28	529·3	569·0	13·09	534·6	595·5
15	18·67	538·2	639·7	10·61	537·6	639·6	12·09	527·8	570·8	13·25	534·4	595·7
20	18·30	538·6	639·7	11·41	536·7	637·3	12·23	529·2	,,	13·46	533·9	596·1
25	18·16	538·5	,,	12·08	537·6	635·1	13·05	530·3	571·3	13·34	533·4	596·4
30	18·08	537·8	639·6	12·76	537·0	632·9	13·32	530·6	,,	13·39	533·0	,,
35	17·91	538·4	638·8	13·96	536·6	631·3	12·51	531·7	568·6	13·41	533·5	598·1
40	17·54	538·8	638·2	14·75	535·4	630·4	11·96	532·9	566·6	13·52	533·5	598·2
45	17·46	539·3	,,	14·80	535·2	629·3	11·75	534·0	,,	13·86	532·7	599·1
50	17·46	539·3	638·4	14·80	536·2	627·0	12·16	532·8	568·7	13·67	533·3	598·8
55	17·42	540·2	,,	15·11	536·4	625·2	12·35	531·3	,,	13·50	533·6	599·0

Bifilar. Observed 2^m after the Declination, $k=0{\cdot}000140$. Balance. Observed 3^m after the Declination, $k=0{\cdot}0000085$.

The temperature of the bifilar and balance magnets, and the observers' initials will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas („) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

Göttingen Mean time of Declination Observation.	OCTOBER 23, 24.											
	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.	DECLINATION.	BIFILAR Corrected.	BALANCE Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
	18h.			22h.			2h.			6h.		
0	25 13·52	533·1	599·5	25 14·41	521·5	611·0	25 19·91	526·8	625·2	25 13·74	534·8	619·9
5	13·69	533·3	600·2	14·53	521·0	611·6	20·02	528·1	,,	13·94	534·2	619·3
10	13·67	533·0	600·7	14·60	520·9	611·2	19·95	527·8	,,	13·90	534·2	618·7
15	13·57	533·6	600·9	14·80	520·9	611·4	19·88	528·2	,,	13·97	533·9	617·6
20	13·72	533·3	601·9	15·25	520·9	,,	19·51	527·8	,,	13·93	534·3	617·4
25	13·43	532·6	602·5	15·47	520·9	,,	19·62	527·7	630·2	14·17	534·3	615·7
30	13·67	532·1	603·3	15·54	520·3	610·9	19·55	527·6	,,	14·13	534·2	615·6
35	13·52	531·8	603·0	15·62	520·6	,,	19·42	528·2	,,	14·13	534·6	,,
40	13·66	532·5	604·1	15·96	520·5	,,	19·48	529·2	631·3	14·10	534·2	615·3
45	13·69	532·7	603·8	16·03	520·5	,,	19·41	529·9	,,	13·96	534·8	615·5
50	14·20	531·9	605·1	16·41	520·9	610·1	19·44	529·7	,,	13·99	534·7	614·6
55	14·40	529·7	606·2	16·59	521·0	,,	19·55	528·5	,,	13·83	534·7	,,
	19h.			23h.			3h.			7h.		
0	25 14·33	528·6	607·0	25 17·09	521·4	611·1	25 19·26	528·2	633·9	25 13·88	534·8	614·3
5	13·99	528·7	607·5	17·39	521·4	611·5	19·10	528·2	,,	13·88	535·0	,,
10	13·79	529·2	607·5	17·42	520·8	,,	18·77	527·6	634·1	13·96	535·4	613·8
15	14·20	527·9	609·5	17·73	521·4	612·1	18·10	527·4	632·0	13·99	535·3	,,
20	13·50	528·8	607·2	18·23	521·2	612·1	18·05	527·8	,,	13·93	535·1	613·0
25	13·27	530·9	607·5	18·27	520·9	611·7	17·76	528·1	632·4	13·86	535·1	611·8
30	13·96	529·8	607·2	18·52	521·5	611·0	17·34	527·9	630·9	13·84	535·2	,,
35	13·91	529·7	605·3	18·63	521·6	610·5	17·36	529·2	631·8	13·83	535·4	,,
40	13·22	531·6	604·8	18·84	521·7	,,	17·07	529·5	631·3	13·86	535·5	610·9
45	13·69	530·4	605·9	18·90	522·3	,,	16·57	530·4	629·9	13·79	535·2	,,
50	13·64	528·2	606·1	19·14	523·1	,,	16·48	531·8	629·8	13·81	535·1	611·9
55	12·96	528·6	605·6	19·39	522·3	610·5	16·45	532·4	,,	13·84	535·2	,,
	20h.			0h.			4h.			8h.		
0	25 13·12	530·6	605·5	25 19·82	525·2	609·8	25 16·30	532·9	629·6	25 13·72	535·3	,,
5	12·63	530·6	606·1	20·40	525·0	,,	16·23	533·1	,,	13·72	535·1	610·4
10	13·14	530·6	606·6	20·87	524·3	610·9	16·21	533·2	629·1	13·76	535·0	612·2
15	12·76	530·3	606·6	20·67	524·0	,,	16·10	533·5	628·9	13·72	535·0	612·3
20	13·39	530·7	606·3	20·89	525·3	613·2	16·10	533·5	628·3	13·69	535·0	,,
25	13·20	528·9	607·0	21·27	524·9	,,	16·01	533·7	627·0	13·66	535·1	,,
30	13·25	528·4	607·0	....	525·9	,,	15·76	533·8	626·5	13·59	535·2	612·7
35	13·14	529·7	606·5	21·07	525·3	615·9	15·39	533·7	625·8	13·61	535·0	611·9
40	13·69	530·4	606·1	20·58	525·3	616·9	15·24	534·2	626·0	13·57	534·9	611·9
45	14·13	529·6	606·3	21·06	525·0	616·5	15·27	535·2	625·0	13·57	534·9	611·5
50	13·97	528·4	607·1	20·45	525·3	,,	15·14	534·6	624·5	13·56	534·5	611·8
55	13·76	527·4	607·0	20·29	524·5	619·8	15·04	534·3	623·8	13·50	534·3	611·6
	21h.			1h.			5h.			9h.		
0	25 13·69	527·0	607·4	25 20·40	524·2	620·0	25 15·02	534·9	622·5	25 13·47	534·4	611·6
5	13·79	527·0	607·7	20·15	524·1	,,	14·78	535·2	622·1	13·52	534·6	611·2
10	13·83	526·5	607·7	20·16	523·6	621·2	14·55	535·0	622·6	13·48	534·6	,,
15	13·67	525·2	609·4	19·75	523·0	,,	14·24	534·9	622·1	13·47	534·9	610·9
20	13·46	525·2	608·9	19·79	522·5	,,	14·20	535·2	622·2	13·49	535·1	,,
25	13·56	525·2	609·1	19·41	521·8	,,	14·15	535·3	621·3	13·56	534·7	611·7
30	13·76	525·5	509·3	19·56	523·3	623·4	14·04	535·1	620·9	13·56	534·7	,,
35	14·11	524·3	609·2	19·86	524·5	,,	13·81	535·4	621·5	13·56	534·5	611·5
40	14·08	524·0	609·0	19·56	523·6	,,	13·69	535·5	620·5	13·54	534·5	,,
45	14·17	522·7	610·1	19·78	524·5	625·0	13·47	535·6	620·5	13·52	534·1	,,
50	14·20	522·2	611·0	19·98	524·5	,,	13·76	535·3	620·3	13·59	534·1	,,
55	....	522·1	610·7	19·73	525·9	,,	13·76	535·0	619·1	13·49	533·5	611·4

BIFILAR. Observed 2m after the Declination, $k=0{\cdot}000140$. BALANCE. Observed 3m after the Declination, $k=0{\cdot}0000085$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas („) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

NOVEMBER 29, 30.

Göttingen Mean Time of Declination Observation.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
	10^h.			14^h.			18^h.			22^h.		
0	25 10.92	535.7	617.6	25 15.85	537.1	604.3	25 15.01	537.0	615.4	25 14.46	534.0	613.5
5	10.41	538.6	616.7	16.10	535.8	,,	14.94	537.0	,,	14.57	534.0	613.7
10	10.50	538.4	616.6	15.96	535.3	600.3	15.01	537.8	,,	14.20	533.5	613.5
15	10.27	538.3	617.5	15.32	534.7	599.7	14.80	538.1	614.8	14.58	533.1	,,
20	10.74	539.3	616.7	14.58	535.1	601.4	14.65	538.5	,,	14.53	533.6	612.8
25	10.87	539.3	617.0	14.46	535.0	,,	14.55	538.5	,,	14.60	534.3	612.6
30	11.15	541.6	615.4	14.37	534.7	602.6	14.57	538.1	615.2	15.11	533.8	612.3
35	10.28	542.7	614.1	14.35	534.7	604.3	14.46	537.7	,,	15.31	532.9	612.1
40	09.60	542.9	613.0	14.48	534.7	,,	14.01	538.3	,,	15.01	533.3	,,
45	09.26	543.2	612.7	14.70	535.2	606.2	14.33	539.1	,,	15.20	533.4	,,
50	09.76	543.6	612.9	14.89	534.5	607.3	14.18	538.3	615.3	15.41	533.4	610.6
55	11.28	544.2	,,	14.98	535.3	,,	14.46	538.3	,,	15.36	333.0	610.9
	11^h.			15^h.			19^h.			23^h.		
0	25 12.83	539.5	613.3	25 15.25	534.3	,,	25 14.33	538.0	615.2	25 15.32	532.7	610.6
5	12.92	536.4	613.2	15.34	534.5	608.7	14.01	537.7	,,	15.64	532.6	610.6
10	12.62	535.4	,,	15.34	535.2	607.6	13.63	539.0	,,	15.24	532.3	610.9
15	12.70	534.4	613.6	14.55	535.5	607.9	14.06	538.8	,,	15.44	532.6	,,
20	12.46	534.1	615.3	15.11	535.5	607.3	14.10	538.7	615.5	15.91	532.7	611.4
25	12.51	535.1	614.5	14.91	535.8	607.6	13.49	538.1	,,	15.99	532.7	611.4
30	12.28	535.5	614.5	14.91	535.6	607.8	13.91	537.9	,,	16.21	533.4	,,
35	12.26	537.2	613.6	14.87	535.8	606.9	13.49	538.1	615.1	16.41	532.7	611.7
40	12.42	538.5	612.4	14.82	535.7	610.7	13.52	538.6	,,	16.68	532.6	612.1
45	13.00	537.9	611.0	14.71	535.8	609.4	14.06	538.5	,,	16.63	533.4	612.1
50	13.59	537.0	610.2	15.11	535.1	610.4	14.18	538.2	614.9	16.72	533.0	612.2
55	13.79	535.3	610.5	15.04	535.5	,,	14.23	537.9	,,	16.36	532.5	610.9
	12^h.			16^h.			20^h.			0^h.		
0	25 13.86	534.4	610.2	25 14.98	535.8	611.1	25 14.23	537.8	615.2	25 16.45	534.0	610.7
5	13.97	534.3	612.1	14.84	535.8	,,	14.23	537.9	,,	16.66	532.9	610.6
10	13.70	534.6	612.6	14.55	536.0	611.4	14.13	537.7	,,	16.43	532.8	610.1
15	13.76	534.8	612.1	14.43	536.4	,,	14.24	537.5	,,	16.39	533.4	609.9
20	13.41	535.6	611.5	14.48	535.9	612.2	14.24	537.5	616.4	16.66	533.1	610.0
25	13.36	536.3	611.5	14.46	535.7	612.7	14.26	536.9	,,	16.35	532.7	609.7
30	13.70	537.1	611.1	14.67	537.0	613.4	14.18	537.0	,,	16.26	532.5	610.3
35	13.72	536.1	611.0	14.77	536.8	612.5	14.30	536.7	617.2	16.03	532.2	609.8
40	13.79	536.2	611.9	14.80	536.9	,,	14.35	536.4	,,	16.06	532.4	609.7
45	14.40	535.3	611.8	14.80	538.8	613.8	14.13	534.4	,,	16.41	532.9	609.7
50	14.30	535.2	611.6	14.80	536.6	612.4	13.25	537.9	615.9	16.53	533.3	609.7
55	14.03	534.9	,,	14.91	536.5	,,	14.13	537.1	,,	16.80	534.1	609.4
	13^h.			17^h.			21^h.			1^h.		
0	25 14.10	536.6	610.9	25 15.01	537.2	613.0	25 14.20	536.2	616.0	25 17.31	534.6	609.4
5	14.13	536.8	609.8	14.98	536.9	613.2	13.94	535.2	,,	17.61	535.4	,,
10	14.13	535.5	,,	14.71	537.1	613.6	14.01	534.6	,,	18.00	534.5	608.3
15	14.21	535.4	609.5	14.60	536.9	612.8	13.83	534.2	616.0	17.68	534.1	,,
20	13.97	534.9	609.4	14.48	536.8	,,	13.94	535.3	,,	17.49	534.3	608.4
25	14.18	535.5	610.1	14.44	536.9	612.8	14.20	535.1	,,	17.60	533.9	,,
30	14.71	534.3	609.1	14.37	536.7	,,	14.37	535.3	615.8	17.81	534.1	,,
35	14.46	536.7	610.1	14.23	536.6	614.2	14.38	534.3	,,	17.83	534.2	609.2
40	15.07	536.2	608.2	14.40	536.8	,,	14.46	533.8	,,	17.84	534.5	,,
45	15.20	535.9	,,	14.43	536.9	,,	14.08	534.3	615.2	17.93	535.2	609.3
50	14.84	534.9	606.1	14.41	537.2	615.2	14.37	534.3	,,	17.94	535.1	608.6
55	14.94	536.4	,,	14.75	537.2	614.3	14.68	534.7	,,	17.73	534.9	609.3

BIFILAR. Observed 2^m after the Declination, $k=0.000140$. BALANCE. Observed 3^m after the Declination, $k=0.0000085$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

Göttingen Mean Time of Declination Observation.	November 29, 30.						December 18, 19.					
	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
	2h.			6h.			10h.			14h.		
0	25 17·65	535·6	610·6	25 14·64	540·5	610·4	25 14·01	540·5	595·6	25 13·91	538·0	,,
5	17·98	535·6	,,	14·71	540·5	,,	13·72	540·8	,,	14·33	537·9	,,
10	17·56	534·9	613·3	14·64	540·5	610·2	13·72	540·4	598·0	14·35	538·7	584·6
15	17·36	535·0	613·1	14·68	540·3	,,	13·52	539·8	,,	14·37	537·8	,,
20	17·22	535·7	,,	14·58	540·3	611·2	13·64	540·5	598·0	13·83	536·9	582·9
25	17·06	536·2	,,	14·51	540·4	610·0	13·41	539·9	,,	13·44	536·4	583·2
30	16·89	536·1	613·7	14·43	540·7	609·8	13·12	539·6	,,	13·43	536·4	583·1
35	16·55	535·1	,,	14·41	540·6	609·3	13·12	539·8	,,	13·72	536·3	584·3
40	16·52	535·2	,,	14·40	540·4	609·7	12·92	539·1	599·7	14·40	537·0	585·6
45	16·55	535·8	613·6	14·38	540·7	,,	12·76	539·0	,,	15·04	538·4	583·3
50	16·15	536·2	,,	14·43	540·4	609·7	12·42	538·7	600·5	14·85	537·8	583·6
55	16·41	536·3	,,	14·46	540·2	609·0	12·69	537·1	,,	14·62	537·5	,,
	3h.			7h.			11h.			15h.		
0	25 16·05	536·4	614·2	25 14·40	540·0	,,	25 12·25	537·8	603·8	25 14·53	537·8	,,
5	16·33	537·6	614·2	14·33	540·4	609·3	11·77	537·5	,,	14·65	538·5	582·7
10	16·30	537·7	615·0	14·30	540·2	608·0	11·77	537·7	,,	14·71	539·1	582·1
15	16·43	537·2	614·2	14·24	539·8	,,	12·16	536·7	603·7	14·80	539·2	,,
20	16·13	536·7	614·1	14·37	539·7	609·2	11·95	535·7	,,	14·84	539·3	581·9
25	15·94	536·7	613·9	14·21	539·4	,,	11·66	535·2	,,	14·91	538·9	,,
30	16·01	537·2	614·1	14·06	539·2	609·2	11·48	532·7	603·0	14·60	539·5	580·6
35	16·03	537·3	614·2	14·13	538·8	,,	11·41	532·6	,,	14·57	540·2	580·7
40	15·76	537·4	614·3	14·10	539·0	,,	10·92	531·7	601·7	14·53	540·3	,,
45	15·59	537·7	614·3	13·96	538·8	608·1	10·13	532·9	,,	14·46	540·5	580·4
50	15·81	538·0	614·4	13·94	538·7	,,	09·02	537·0	598·8	14·58	540·6	580·1
55	15·59	537·6	614·5	14·06	538·0	,,	08·16	547·5	595·2	14·87	540·7	,,
	4h.			8h.			12h.			16h.		
0	25 15·62	537·6	617·2	25 14·08	537·8	608·1	25 08·14	552·6	592·4	25 14·67	540·8	580·7
5	15·51	537·5	617·1	14·06	537·8	,,	08·11	553·2	591·1	14·87	541·7	,,
10	15·20	537·9	616·1	12·98	538·1	,,	08·14	552·3	589·3	14·80	541·7	580·0
15	15·27	538·6	616·2	14·23	538·7	606·9	07·81	550·4	587·8	15·07	542·2	,,
20	15·34	538·9	615·4	14·15	539·0	,,	07·47	547·9	,,	14·80	541·7	580·2
25	14·68	540·2	614·3	13·96	539·2	,,	07·51	545·1	587·5	14·71	541·5	579·7
30	14·50	539·5	616·1	13·79	538·8	,,	07·71	543·0	,,	14·77	543·1	,,
35	14·87	539·1	617·2	13·99	539·0	607·4	07·74	540·0	587·5	14·44	543·3	579·4
40	14·73	538·9	617·3	13·99	539·0	,,	07·71	538·8	,,	14·24	542·6	,,
45	14·71	538·7	617·3	13·72	538·8	,,	08·77	538·3	586·8	13·79	541·7	579·9
50	14·65	539·1	617·0	13·86	539·1	,,	09·69	536·0	,,	14·04	541·9	579·4
55	14·68	539·6	617·0	13·83	539·1	,,	09·96	534·9	,,	14·31	542·5	,,
	5h.			9h.			13h.			17h.		
0	25 14·43	540·2	617·1	25 13·76	539·1	607·0	25 10·48	535·0	586·7	25 14·37	542·9	579·9
5	14·30	540·7	616·9	13·69	538·9	,,	11·10	535·9	586·6	14·70	541·9	581·2
10	14·77	541·1	615·5	13·52	539·6	,,	11·95	536·1	,,	14·67	541·7	581·6
15	14·64	539·8	615·7	13·59	540·0	605·7	12·90	535·8	585·9	14·85	541·0	,,
20	14·82	539·1	,,	13·52	539·8	,,	13·46	536·6	584·5	14·73	541·8	581·2
25	14·85	538·0	616·9	13·52	539·3	,,	14·08	536·5	584·6	14·82	542·8	580·7
30	14·91	539·2	615·8	13·56	539·1	606·4	14·11	535·5	583·0	14·71	542·6	580·4
35	14·70	539·8	615·3	....	......	......	13·72	536·9	,,	14·50	543·4	580·9
40	14·57	539·9	614·3	13·41	539·2	606·8	14·13	538·1	583·0	14·67	543·4	581·0
45	14·84	540·1	615·9	13·39	539·5	,,	14·89	538·3	,,	14·67	543·4	580·6
50	14·60	540·2	613·8	13·49	539·1	606·4	14·67	537·5	582·3	14·33	543·2	579·8
55	14·62	540·3	612·3	13·05	538·9	,,	14·30	537·2	,,	14·03	543·3	579·4

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0·0000085$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

Göttingen Mean Time of Declination Observation.	December 18, 19.											
	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.	Declination.	Bifilar Corrected.	Balance Corrected.
Min.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.	° ′	Sc. Div.	Mic. Div.
		18h.			22h.			2h.			6h.	
0	25 13·99	543·4	579·2	25 22·01	543·2	573·3	25 18·07	536·3	595·0	25 15·09	535·0	627·1
5	13·96	543·5	579·6	21·90	542·6	573·1	18·41	536·3	,,	15·74	532·8	625·6
10	14·03	543·6	579·6	21·39	541·1	573·4	17·94	537·1	595·3	15·81	531·0	,,
15	13·99	543·6	580·1	20·20	538·7	572·9	18·20	536·9	,,	15·64	531·8	624·3
20	14·06	543·2	579·5	19·42	536·0	574·4	17·93	536·0	597·4	15·45	530·9	623·7
25	14·06	542·8	,,	18·99	535·9	575·3	18·23	537·3	,,	14·23	534·7	621·9
30	13·86	543·1	579·0	18·82	535·0	575·6	18·16	536·2	,,	14·96	536·4	620·8
35	13·90	543·2	579·6	18·97	534·5	577·8	17·71	534·1	598·0	16·13	533·8	620·9
40	14·64	542·5	579·7	18·82	534·7	573·1	17·40	534·7	,,	16·18	532·0	621·6
45	14·17	542·4	,,	19·05	533·7	578·8	17·26	535·3	598·2	16·26	531·6	622·0
50	14·55	541·1	580·7	18·43	533·4	578·9	16·82	535·7	,,	15·81	534·2	620·6
55	14·43	541·5	580·3	18·54	533·1	577·0	16·86	535·1	,,	15·99	535·8	,,
		19h.			23h.			3h.			7h.	
0	25 14·03	542·3	579·9	25 18·34	533·1	577·1	25 16·45	535·3	598·3	25 16·10	535·7	618·4
5	13·63	544·6	579·1	18·28	531·7	576·8	15·81	538·8	,,	15·81	535·9	616·9
10	13·66	545·6	578·1	17·96	533·0	576·7	16·41	542·2	600·1	16·13	536·2	615·0
15	13·46	545·7	579·1	18·07	532·1	577·7	16·92	541·0	,,	16·13	535·1	,,
20	13·72	546·2	578·5	18·20	529·0	579·5	17·63	539·9	606·4	16·43	534·6	614·1
25	13·81	545·0	579·2	18·20	528·7	579·5	17·67	536·7	608·9	15·78	534·6	,,
30	13·66	544·3	579·1	18·27	530·7	579·9	18·60	534·7	609·4	15·20	535·0	611·5
35	13·93	542·6	580·4	17·74	530·1	579·7	19·21	532·9	,,	14·96	535·3	611·8
40	13·90	542·7	,,	17·91	530·6	580·4	19·19	531·0	609·8	14·91	535·6	611·3
45	14·13	542·2	580·3	17·42	530·2	582·1	18·94	530·3	,,	14·78	535·5	610·1
50	14·43	542·5	,,	18·10	526·5	583·9	18·13	528·5	613·0	14·57	535·6	609·6
55	14·46	542·5	580·6	17·15	527·6	585·1	18·25	522·7	615·7	14·50	535·9	609·0
		20h.			0h.			4h.			8h.	
0	25 14·37	542·7	580·3	25 16·45	530·3	585·3	25 17·24	520·1	617·5	25 14·41	535·9	608·6
5	14·91	542·1	,,	16·52	529·4	586·6	16·53	521·1	617·5	14·35	536·6	608·0
10	15·04	541·7	581·1	16·46	530·4	588·1	16·39	521·5	617·9	14·46	535·9	607·6
15	15·58	541·4	581·2	16·52	530·1	589·0	15·69	521·3	618·2	14·13	535·3	607·4
20	16·15	541·3	,,	16·63	531·4	590·4	14·94	522·1	618·3	14·10	535·2	607·6
25	16·38	539·8	580·9	16·38	531·0	590·9	14·06	523·6	618·3	14·06	536·0	606·1
30	16·82	539·7	,,	16·60	532·4	591·4	13·29	525·9	619·8	13·76	535·9	603·5
35	17·63	540·7	581·0	16·38	533·7	592·0	13·49	527·6	620·2	13·39	534·7	602·4
40	17·86	538·8	580·8	16·73	531·8	591·7	13·22	527·9	621·8	13·46	535·0	601·3
45	17·86	537·6	,,	16·23	533·7	591·3	12·55	528·1	624·1	12·85	535·7	599·6
50	17·83	538·6	580·8	16·62	535·7	,,	12·18	530·6	625·3	12·85	535·4	599·3
55	18·87	535·6	,,	17·06	534·9	591·7	12·22	530·5	626·1	12·92	534·7	,,
		21h.			1h.			5h.			9h.	
0	25 19·22	533·4	582·5	25 16·23	537·2	591·6	25 12·80	530·6	627·2	25 12·72	532·9	600·1
5	19·75	533·1	582·0	18·00	536·2	592·9	13·52	529·8	626·7	12·31	531·7	600·3
10	20·23	530·5	583·3	17·54	535·5	593·4	14·20	533·3	626·2	11·51	530·9	,,
15	21·04	531·4	583·9	17·83	536·2	594·1	16·92	530·8	628·6	10·97	532·5	600·0
20	21·19	529·0	583·5	17·86	536·0	593·6	17·07	525·9	628·7	11·44	533·1	,,
25	21·64	532·2	581·8	18·05	535·6	594·5	15·51	527·2	629·4	11·57	534·8	598·0
30	22·44	533·7	580·3	18·07	537·1	,,	16·60	524·5	632·5	11·91	535·7	596·7
35	23·14	535·7	578·7	18·16	537·4	,,	16·05	524·1	634·5	12·02	533·0	596·5
40	23·58	538·9	577·4	18·50	537·9	595·6	15·17	526·2	635·2	11·79	530·2	598·4
45	23·98	541·8	575·3	18·54	535·6	596·3	14·89	528·1	635·1	11·74	529·3	598·5
50	23·34	542·7	574·3	18·48	536·3	595·6	12·87	534·8	630·9	12·11	529·3	598·2
55	22·84	541·9	573·6	18·40	536·4	595·1	14·24	535·9	,,	12·02	530·6	597·2

BIFILAR. Observed 2^m after the Declination, $k=0·000140$. BALANCE. Observed 3^m after the Declination, $k=0·0000085$.

The temperature of the bifilar and balance magnets, and the observers' initials, will be found at the corresponding hours in the Hourly Observations of Magnetometers.

When double commas (,,) occur in the column for the balance magnetometer, the needle was examined, and no change from the previous observation being appreciable, the micrometers were not altered.

EXTRA OBSERVATIONS

OF

MAGNETOMETERS.

MAKERSTOUN OBSERVATORY.

1844.

Gött. Mean Time.		Declination.		Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
2	7	0	25 17·53	2	504·7	3	822·3
		10	18·70	12	502·9	13	832·0
		15	19·49	17	504·0	18	834·4
		20	19·73	22	504·9	23	834·4
		25	18·90	27	506·3	28	833·5
		30	18·16	32	509·5		
		35	17·53	37	511·9		
2	8	0	21·16	2	498·9	3	844·8
		5	18·16	7	503·3	8	843·6
		10	18·10	12	508·5		
		15	20·25	17	506·3	18	844·6
		20	20·53	22	502·6		
		25	19·10	27	503·3		
		30	17·80	32	501·4		
		35	16·59	37	504·6		
		40	12·63	42	503·6	43	841·9
		45	07·82	47	509·6	49	841·6
		50	09·49	52	515·5		
		55	12·35	57	514·6	58	836·6
2	9	0	16·21	2	519·6	3	828·9
		10	19·10	12	515·1	13	815·0
		15	20·25	17	510·1	18	811·2
		25	21·01	27	504·7	28	806·0
		30	18·97	32	501·8	33	806·7
		35	18·10	37	500·9	38	809·4
		40	16·87	42	502·4	43	807·5
		45	12·98	47	511·7	48	808·9
		50	10·45	52	520·5	53	805·8
		55	12·76	57	517·2	58	806·9
2	10	0	14·13	2	516·0	3	805·1
		35	17·89	37	503·8	38	812·2
2	11	0	17·17	2	512·0	3	792·8
		25	19·17				
2	12	0	16·60	2	516·2	3	784·2
2	13	0	19·22	2	515·3	3	789·9
		15	19·58				
2	14	0	21·23	2	516·0	3	795·5
3	13	0	25 20·76	2	525·0	3	793·4
		10	19·44	12	518·9	13	794·0
		15	18·12	17	518·1	18	794·8
		20	16·77	22	518·9	23	795·2
		25	16·73	27	519·5		
		30	17·39	32	518·7	33	797·6
		35	18·21	37	518·1		
		40	19·12	42	518·5	43	798·7
		45	20·16				
3	14	0	19·96	2	520·1	3	794·8
4	9	0	25 21·68	2	515·9	3	805·8
		5	21·06	7	514·4		
		10	19·42	12	512·7	13	809·8
		15	16·73	17	511·8	18	812·6
		20	14·08	22	513·8	23	815·3
		25	12·08	27	512·7	28	823·1
		30	11·49	32	512·9	33	830·2
		35	12·75	37	512·6	38	834·8
		40	13·50	42	517·1	43	833·2
		45	14·13	47	520·2	48	834·1
		50	16·68	52	516·1	53	834·7
		55	18·81	57	514·7	58	832·1

Gött. Mean Time.		Declination.		Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
4	10	0	25 19·95	2	511·1	3	834·0
		5	20·79	7	511·6	8	833·0
		10	20·06	12	513·2	13	830·6
		15	20·58	17	514·6	18	829·2
		20	20·85	22	515·5	23	827·5
		30	20·20	32	512·6	33	827·3
4	11	0	19·55	2	515·9	3	821·6
4	16	0	24·32	2	514·9	3	780·4
		15	23·48	17	522·3	18	759·0
		20	23·93	22	528·5	23	750·4
		25	23·34	27	528·1	28	744·2
		30	22·91	32	525·7	33	738·2
		35	21·70	37	523·8	38	738·0
		40	22·80	42	520·9	43	740·1
		45	23·65	47	518·3	48	739·2
		50	23·45	52	519·2		
		55	23·18	57	520·2	58	736·4
4	17	0	23·11	2	521·1	3	733·6
4	18	0	17·67	2	527·0	3	727·1
4	19	0	19·32	2	525·5	3	732·1
		10	19·31	12	529·7	13	733·0
4	20	0	21·06	2	524·6	3	751·2
4	22	0	24·12	2	521·8	3	765·9
		45	26·90	47	511·4	48	782·8
		50	27·15	52	511·9	53	777·0
		55	27·26	57	508·8	58	775·6
4	23	0	26·96	2	515·5	3	772·3
		5	28·33	7	509·3	8	774·5
		10	28·67	12	504·8	13	776·8
		15	28·20	17	501·7	18	779·1
		20	25·36	22	503·6	23	771·5
		25	23·41	27	511·3	28	770·8
		30	25·43	32	517·9	33	769·5
		35	25·26	37	518·4	38	770·3
		40	25·47	42	518·5	43	771·8
5	0	0	24·59	2	518·6	3	773·9
		50	32·40	52	518·2	53	783·8
		55	31·92	57	515·8	58	781·9
5	1	0	29·27	2	513·9	3	782·7
		5	29·07	7	512·2		
		10	26·90	12	514·8	13	785·2
		15	28·36	17	515·3		
		20	27·22	22	518·9	23	785·5
		25	26·85	27	521·2		
		30	26·28	32	519·0	33	789·2
		35	25·41	37	519·9	38	788·6
		40	24·66	42	518·9	43	799·0
		45	23·93	47	520·6		
		50	23·70	52	521·1	53	793·3
		55	24·30				
5	2	0	25·31	2	519·5	3	797·9
		20	23·73	22	522·6	23	798·0
5	3	0	24·93	2	523·7	3	795·5
5	6	0	20·05	2	523·8	3	818·7
		20	21·51	22	517·1	23	821·4
		25	21·59	27	514·2	28	822·5
		30	21·61	32	517·4	33	824·6
		35	22·89	37	511·6	38	827·1
		40	20·79	42	508·5	43	828·1
		45	18·10	47	515·5	48	825·0
		50	18·47	52	521·6		

Gött. Mean Time.		Declination.	
d.	h.	Min.	° ′
5	6	55	25 19·
5	7	0	18·
		11	16·
		15	13·
		20	10·
		25	10·
		30	03·
		31	25 01·
		34	24 59·
		35	24 59·
		39	24 59·
		40	24 59·
		45	25 01·
		50	03·
		55	06·
5	8	0	10·
		5	12·
		10	11·
		15	11·
		20	12·
		25	14·
		30	16·
		35	18·
		40	18·
		45	18·
		50	18·
		55	17·
5	9	0	17·
		5	18·
		10	20·
		15	20·
		20	22·
		25	21·
		30	21·
		35	21·
		40	20·
		45	18·
		50	11·
		55	10·
5	10	0	13·
		5	15·
		10	22·
		15	30·
		16	31·
		19	32·
		20	32·
		25	29·
		30	24·
		35	19·
		40	15·
		45	15·
		50	23·
		55	18·
5	11	0	19·
		5	20·
		10	21·
		15	21·
		20	20·
		25	19·
		30	20·

BIFILAR. k=0·000140. BALANCE. k=0·0000085.

…ifilar …rrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
M.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
5	521·4	58	819·5	5 11	35	25 21·09	37	519·3	38	771·4	6 1	35	25 25·87	37	509·4	38	796·7
	519·0	3	812·3		40	21·79	42	518·8	43	773·2		40	25·38	42	506·5	43	795·6
	511·8	13	824·5	5 12	0	21·16	2	514·1	3	778·0		45	23·72	47	510·5	48	792·9
	515·1	18	819·5	5 15	0	20·49	2	513·0	3	780·6		50	22·84	52	514·6	53	795·0
	521·1	23	817·9		5	20·49	7	515·0	8	779·5		55	22·64	57	517·2	58	795·7
	513·5	28	821·6		10	22·80	12	516·6			6 2	0	22·69	2	517·7	3	797·5
					15	24·79	17	515·9	18	774·6	6 3	0	23·61	2	522·2	3	803·1
	513·6	33	819·7		20	25·91	22	516·4	24	779·8	6 4	0	17·33	2	507·2	3	827·6
	527·2				25	27·62	27	513·4	28	777·0		5	14·98	7	517·6	8	826·3
	529·2	38	817·6		30	27·14	32	513·4	33	773·1		10	15·41	12	522·4	13	827·4
					35	26·81	37	513·6	38	768·2		15	15·71	17	517·0	18	828·4
2	527·0	43	821·1		40	25·74	42	515·7	43	764·4		20	17·29	22	518·4		
7	522·0	48	826·4		45	23·88	47	517 0	48	760·2		25	17·40	27	517·1		
2	513·5	53	831·8		50	21·70	52	516·8	53	757·2		30	18·92	32	517·0		
7	505·0	58	837·7		55	20·49	57	516·7	58	760·3		35	17·83	37	517·3	38	824·8
2	503·4	3	841·5	5 16	0	26·82	2	517·9	3	762·1		40	17·61	42	517·1	43	822·9
7	504·3	8	837·2		5	19·49	7	517·0				45	18·25	47	520·1		
2	508·4	13	829·5		10	18·72	12	517·3	13	763·3		50	18·84	52	524·4	53	818·8
7	514·8	18	824·5		15	18·20	17	517·8	18	764·8		55	20·13	57	524·4		
2	516·9	23	820·2		20	18·48	22	516·7			6 5	0	21·56	2	523·3	3	814·3
7	516·4	28	819·4	5 17	0	20·60	2	516·1	3	769·6		5	21·64	7	521·0	8	811·7
2	517·8	33	816·6		10	17·49	12	521·0	13	769·0		10	22·67	12	519·0	13	810·6
7	516·3	38	816·1		15	18·23	17	518·6	18	762·2		15	21·66	17	519·1		
2	517·0	43	813·8		20	18·37	22	520·8	23	774·2		20	21·19	22	520·7	23	810·2
7	516·3	48	811·3		25	19·71	27	519·7				25	22·13	27	521·6	28	808·9
2	513·1	53	810·7		30	20·18	32	519·2	33	775·0		30	21·19	32	522·1	33	806·3
7	512·7	58	811·4	5 18	0	18·63	2	523·3	3	768·5		35	21·07				
2	514·9	3	812·1		10	18·61	12	523·7	13	766·8	6 6	0	23·18	2	519·9	3	806·2
7	513·5	8	816·0		15	19·41	17	521·5				20	15·01	22	521·3	23	797·3
2	511·4	13	817·5	5 19	0	26·07	2	511·7	3	774·5		25	11·74	27	528·8	28	798·0
7	511·9	18	819·2		10	24·99	12	515·1	13	771·5		30	12·53	32	533·4	33	797·1
2	510·0	23	819 9		15	25·40	17	515·8	18	771·4		35	14·75	37	532·9	38	796·7
7	513·1	28	820·0		20	25 26	22	515·5				40	15·81	42	527·3	43	798·4
2	515·4	33	818·3		25	24·52	27	515·4	28	·769·8		45	15·98	47	526·4	48	799·1
57	515·9	38	817·1		30	23·32	32	514·1	33	770·4		50	17·53	52	524·7	53	797·9
					35	22·82	37	515·9				55	18·52	57	520·2	58	797·3
47	511·8	48	812·0		40	23·32	42	519·0	43	768·1	6 7	0	18·21	2	520·9	3	796·3
52	521·7	53	806·6		45	23·59	47	521·7	48	768·4		5	18·90	7	518·4	8	797·3
57	528·5	58	804·0		50	23·38	52	523·2				10	19·88	12	517·4	13	799·5
2	525·1	3	805·3		55	23·98	57	522·8	58	767·4		15	20·69	17	516·1		
7	532·6	8	798·8	5 20	0	24·26	2	520·9	3	769·7	6 8	0	20·96	2	520·1	3	789·7
12	535·4	13	794·8	5 23	0	25·11	2	501·7	3	794·6		45	15·86	47	509·2	48	798·0
							12	502·3				50	11·48	52	517·8	53	794·6
17	521·1	18	794·2		15	24·62	17	501·5	18	795·9		55	08·38	57	525·9	58	789·8
21	510·9				20	24·01	22	504·0			6 9	0	03·02	2	539·5	3	778·9
22	508·6	23	790·6		45	26·54	47	509·9	48	795·8		1	02·33	4	545·4		
26	502·8				50	26·20	52	504·5				5	04·79	6	548·9		
27	501·6	28	786·5		55	24·93	57	507·2	58	794·2				7	551·1	8	773·0
32	502·7	33	779·0	6 0	0	24·66	2	508·3	3	794·7		10	09·64	12	549·8	13	773·6
37	506·2	38	775·3		10	26·58	12	513·0	13	794·2		15	14·62	17	537·1	18	775·7
42	517·9	43	772·1		15	25·83	17	512·9				20	16·41	22	526·0	23	776·2
47	525·3	48	766·8		20	23·31	22	508·8	23	791·0		25	14·70	27	533·5	28	768·8
52	527·0	53	766·4		25	23·54	27	510·2				30	16·84	32	532·6	33	767·9
57	524·0	58	766·6		30	23·51	32	511·9	33	790·4		35	17·46	37	526·6	38	766·9
2	521·1	3	767·5		35	23·16	37	510·8				40	16·87	42	527·1	43	763·8
7	521·5	8	767·3		40	23·24	42	512·6	43	792·3		45	18·10	47	521·5	48	765·3
12	518·5	13	769·0	6 1	0	24·59	2	516·3	3	790·9		50	17·04	52	516·6		
17	514·8	18	770·0		10	24·94	12	514·3				55	14·85	57	515·4	58	765·6
22	515·9	23	770·9		20	27·21	22	517·1	23	793·0	6 10	0	13·67	2	514·2	3	767·0
27	520·5	28	768·2		25	27·51	27	512·7	28	793·8		5	13·25	7	511·6	8	771·3
32	519·2				30	27·01	32	509·9	33	796·0		10	12·87	12	511·0		

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Gött. Mean Time.	Declination.			Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
6 10	15	25	12·73	17	511·4	16	772·0
	20		13·32	22	513·4		
	25		14·71	27	515·6	28	771·5
	30		14·92	32	515·1	33	771·4
6 11	0		18·84	2	511·5	3	777·9
	10		19·41	12	515·0	13	778·8
	15		19·61	17	513·9		
6 12	0		20·38	2	517·8	3	766·9
	10		22·89	12	516·1	13	767·0
	15		23·86	17	513·8		
	20		24·40	22	513·1	23	767·7
	25		23·73	27	514·6	28	765·6
	30		22·91	32	517·0	33	763·4
	35		22·69	37	519·3	38	764·2
	40		22·87	42	520·6	43	763·7
	45		23·12	47	520·0	48	764·4
7 6	7	25	24·	7	513·	7	804·
	15		16·79	17	505·2		
	20		10·63	22	513·1		
	25		05·72	27	528·8	28	797·1
	30		07·40	32	533·0	33	800·4
	35		10·56	37	528·4	38	805·2
	55		17·63	57	518·0	58	802·4
7 12	50		21·57	52	514·8	53	754·2
7 13	0		20·96	2	517·8	3	756·2
7 14	0		19·98	2	517·7	3	776·7
	10		18·30	12	516·9	13	777·2
	15		18·18	17	516·3	18	777·7
	35		19·44				
7 15	0		21·84	2	517·0	3	787·2
	30		21·10	32	515·9	33	787·4
7 16	0		21·32	2	517·6	3	789·8
7 19	0		23·41	2	520·7	3	780·9
	30		21·27	32	520·9	33	780·8
7 20	0		20·74	2	520·7	3	785·3
7 21	0		20·62	2	520·6	3	793·5
	15		21·27	17	522·4	18	781·6
	20		21·36	22	520·3	23	782·5
	25		21·26	27	519·3	28	783·6
	30		20·60	32	519·1	33	783·5
	35		20·76	37	518·2	38	783·5
7 22	0		20·25	2	516·5	3	790·5
8 6	0	25	19·45	2	519·0	3	818·3
	10		22·74	12	513·1	13	821·5
	15		21·86	17	510·1	18	819·6
	20		20·49	22	510·6		
	25		19·21	27	511·3		
	30		19·02	32	513·2		
	35		19·93	37	509·4	38	825·7
	40		19·37	42	510·2	43	827·2
	45		19·95	47	509·2		
	50		18·50	52	510·2		
	55		16·35	57	512·6	58	824·1
8 7	0		15·49	2	513·2	3	825·0
	5		15·11	7	515·2	8	824·9
	10		14·50	12	518·8		
	15		15·91	17	522·3		
	20		17·44	22	521·4	23	822·7
	25		18·87	27	518·9		

Gött. Mean Time.	Declination.			Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
8 7	30	25	20·53	32	517·5		
	35		21·93	37	514·4		
	40		21·91	42	512·7		
	45		22·04	47	512·6	48	821·1
	50		21·36	52	512·0	53	818·8
	55		20·20	57	515·7	58	816·8
8 8	0		18·81	2	518·1	3	814·0
	15		20·22	17	509·8	18	821·6
	20		20·79	22	508·7	23	823·5
	30		21·04	32	510·9		
8 9	0		20·05	2	519·3	3	812·6
8 10	0		18·67	2	515·3	3	813·4
	10		15·04	12	529·6	13	801·4
	15		13·97	17	546·6	18	785·2
	20		14·51	21	556·5		
				22	556·7	23	774·3
				24	558·2		
	25		20·13	26	556·7		
				27	553·5	28	770·4
				29	544·9		
	30		25·67	32	531·6	33	770·1
	35		24·30	37	514·7	38	768·3
	40		17·49	42	519·0	43	759·9
	45		16·75	47	519·2	48	752·3
	50		17·61	52	508·3	53	755·7
	55		12·78	57	514·5	58	753·6
8 11	0		12·65	2	520·4	3	751·7
	5		16·33	7	519·2	8	754·2
	10		19·84	12	515·7	13	755·2
	15		21·91	17	510·5	18	756·7
	20		22·15	22	506·1	23	760·2
	25		20·63	27	508·5	28	758·4
	30		17·84	32	515·4	33	758·7
	35		16·93	37	518·4	38	759·1
	40		16·84	42	518·8	43	759·4
	45		16·48	47	518·6	48	761·3
	50		17·06	52	515·8	53	761·8
	55		16·26	57	516·9	58	761·5
8 12	0		15·56	2	517·1	3	760·8
	5		15·54	7	513·2	8	759·0
	10		14·71	12	514·6		
8 13	0		20·18	2	517·0	3	757·0
8 19	0	25	21·26	2	522·3	3	784·9
	15		22·13	17	527·4	18	781·6
	20		21·50	22	525·6	23	778·9
	25		22·04	27	526·5	28	780·3
	30		22·42	32	525·4		
	35		22·10	37	524·4	38	778·8
	40		22·04	42	521·4	43	776·1
	45		21·12	47	523·1	48	777·1
	50		20·45	52	523·3		
	55		20·49	57	523·7	58	776·6
8 20	0		20·40	2	522·3	3	779·5
	5		20·55	7	521·0	8	780·5
	10		20·58	12	520·7	13	780·3
	15		20·53	17	520·5	18	779·7
8 21	0		20·22	2	520·0	3	783·7
9 2	0	25	22·20	2	516·2	3	799·8
	10		22·40	12	520·2	13	803·0

Gött. Mean Time.	Declination.		
d. h.	Min.	°	′
9 2	15	25	21·98
	20		21·17
	25		22·18
	30		22·20
	35		22·03
	40		21·98
	45		21·56
	50		21·76
	55		22·06
9 3	0		22·18
	5		21·36
	10		22·96
	15		23·34
	20		22·28
	25		22·82
9 4	0		21·68
	10		21·50
9 5	0		19·73
	10		20·08
9 6	0		18·68
	10		14·68
	15		12·51
	20		09·32
	25		11·91
	30		14·82
	35		17·54
	40		18·92
	45		18·40
	50		19·91
	55		22·25
9 7	0		23·34
	5		22·10
	10		22·10
	15		20·76
	20		19·89
	25		20·18
	30		20·52
	35		19·39
	40		16·06
	45		08·25
	50		16·63
	55		19·56
9 8	0		16·60
	5		16·55
	10		19·56
	15		10·92
	20		05·80
	25		04·71
	30		04·71
	35		09·49
	40		09·93
	45		12·75
	50		12·16
	55		12·80
9 9	0		15·36
	5		16·93
	10		16·75

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

Jan. $7^d\ 1^h$. The magnets appeared to be slightly disturbed.
Jan. $9^d\ 2^h\ 45^m$. The vibrations of the bifilar magnet were suddenly interrupted, and from 50^m to $3^h\ 0^m$ the vibrations were considerable.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
[illegible]	515·4			9 9	15	25 17·80	17	506·7	18	793·6	9 21	10	25 23·11	12	520·3	13	783·7
2	521·4	23	805·1	9 10	0	20·02	2	512·1	3	793·3		15	23·27	17	519·6	18	784·1
7	524·4	28	804·4		10	20·09	12	512·1	13	793·3		20	23·66	22	517·7		
[illegible]	523·2				55	16·55	57	516·3	58	792·2	9 22	0	22·40	2	516·5	3	788·0
2	523·4			9 11	0	15·58	2	514·9	3	791·8		50	20·45	52	514·0	53	797·6
7	521·3	38	806·0		5	14·80	7	515·6			9 23	0	21·03	2	515·1	3	798·3
2	518·5	43	806·4		10	14·13	12	515·9	13	795·7		25	20·97	27	518·2	28	796·6
7	518·9				15	14·04	17	517·7			10 0	0	21·53	2	514·1	3	795·7
2	519·3	53	807·8		20	14·53	22	518·6	23	796·6							
7	519·3				25	15·39	27	516·3			10 6	0	25 21·26	2	523·2	3	798·2
2	522·2	3	807·6		30	15·44	32	515·6	33	796·8		10	20·85	12	524·1	13	797·2
7	524·1				35	15·78	37	515·6				55	23·12	57	520·6	58	799·3
1	523·8				40	16·57	42	516·2	43	797·7	10 7	0	23·24	2	518·2	3	800·7
2	523·0	13	811·9		45	16·82	47	515·4				5	22·87	7	517·2	8	801·7
7	520·8	18	814·8		50	17·58	52	514·8	53	800·0		10	22·42	12	516·3	13	802·3
1	519·8				55	18·15	56	513·8				55	24·08	57	516·8	58	809·0
2	518·8			9 12	0	18·95	2	515·6	3	799·6	10 8	0	24·1	2	514·9	3	809·5
3	521·4				5	19·26	7	514·0				5	24·20	7	514·0	8	809·7
7	520·6	28	814·7	9 13	0	20·18	2	513·9	3	793·1	10 9	0	21·46	2	517·8	3	816·1
2	518·3	3	810·0		5	19·76	7	512·4	8	793·1		25	18·75	27	516·3	28	817·2
2	520·0	13	810·5		10	19·56	12	511·7	13	795·4		30	17·42	32	515·2	33	819·1
2	520·2	3	811·1		15	19·48	17	510·1	18	796·3		35	16·13	37	520·3	38	817·3
2	522·5	13	810·3		20	19·24	22	511·0	23	797·0		40	17·75	42	521·0	43	817·4
2	509·7	3	817·1		25	18·87	27	511·9				45	19·43	47	517·4	48	819·0
2	505·3	13	821·9		30	18·90	32	511·9	33	797·4		50	19·94	52	514·6	53	820·5
7	501·6	18	821·2	9 14	0	19·82	2	515·5	3	791·3		55	20·11	57	515·1	58	821·4
2	511·5	23	824·4		10	19·04	12	513·8	13	791·0	10 10	0	20·29	2	515·0	3	821·9
7	515·4	28	826·1		15	19·48	17	512·4				5	19·21	7	515·4	8	817·3
2	518·5	33	824·8	9 15	0	21·19	2	511·1	3	789·8		10	14·30	12	524·5	13	807·4
7	519·1				10	20·45	12	511·5	13	787·4		14	12·78				
2	517·7	43	821·1		15	20·60	17	513·9	18	786·7		15	14·04	17	541·2	18	798·1
7	517·4	48	818·6		20	20·98	22	514·9	23	785·3		20	20·94	22	538·2	23	797·1
52	519·7				25	20·58	27	516·3	28	784·3		25	24·75	26	531·2		
57	518·2	58	819·1		30	21·76	32	516·3	33	783·2				27	529·1	28	794·0
2	512·2	3	819·5		35	22·64	37	516·0	38	780·4		30	25·81	31	524·6		
7	511·9	8	818·5		40	22·57	42	517·1	43	778·0				32	523·9	33	786·4
12	511·1				45	22·53	47	518·9	48	775·2		35	22·92	36	518·7		
17	510·8	18	816·7		50	22·11	52	520·4	53	770·4				37	518·2	38	782·3
22	513·6				55	22·06	57	520·2	58	768·5		40	16·73	42	525·2	43	774·4
27	513·7	28	817·2	9 16	0	22·10	2	518·7	3	767·7		45	15·94	46	531·2		
32	510·2				5	21·95	7	516·8	8	767·1				47	531·4	48	766·5
37	504·2	38	828·3		10	20·90	12	517·7	13	766·2		50	17·53	52	527·4	53	757·3
42	507·0	43	823·8		15	20·63	17	517·9	18	765·0		55	18·82	57	520·2	58	755·4
47	535·3	48	809·6	9 17	0	20·18	2	517·3	3	768·0	10 11	0	19·02	2	516·2	3	755·7
52	544·2	53	805·1		10	20·97	12	516·1	13	768·6		5	18·28	7	510·6	8	758·6
57	530·3	58	800·9		15	21·18	17	516·8	18	769·1		10	16·82	12	508·1	13	762·3
2	518·8	3	792·9	9 18	0	20·43	2	518·0	3	772·9		15	14·85	17	508·5	18	765·5
7	522·9	8	793·3		5	20·06	7	517·8	8	773·3		20	12·87	22	511·8	23	768·0
12	505·7	13	799·0		10	19·89						25	12·70	27	517·0	28	769·7
17	506·3	18	797·6	9 19	0	19·84	2	520·9	3	777·6		30	14·10	32	517·0	33	770·6
22	520·7	23	791·4		5	20·17	7	525·2	8	778·7		35	15·61	37	517·8	38	771·5
27	527·3	28	787·2		10	20·94	12	524·8	13	778·3		40	17·91	42	511·8	43	778·2
32	536·5	33	787·2		15	21·07	17	522·7	18	779·0		45	18·88	47	506·1	48	784·9
37	526·9	38	788·5		20	21·17	22	519·8	23	781·4		50	17·51	52	506·2	53	787·7
42	523·5				25	20·63	27	519·3	28	781·6		55	15·94	57	507·9		
47	513·4	48	790·6		55	22·47	57	516·5	58	784·0	10 12	0	14·70	2	509·1	3	788·3
52	510·7	53	791·6	9 20	0	22·25	2	516·0	3	783·4		5	14·28	7	510·8		
57	511·2				5	21·03	7	518·5	8	782·9		10	15·24	12	511·2		
2	510·1	3	792·1		10	21·10	12	519·9	13	782·8		15	16·82	17	504·0	18	792·3
7	506·3	8	792·8		15	21·16	17	519·8	18	782·8		20	16·08	22	500·2	23	794·7
12	508·1			9 21	0	19·37	2	517·9	3	783·2		25	15·61	27	498·4	28	797·6

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

Jan. 10d 10h 5m. The vibrations of the declination and bifilar magnets were suddenly interrupted.

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
10 12	30	25 14·33	32	499·3	33	798·7
	35	13·29	37	503·1	38	799·0
	40	13·96	42	505·9	43	800·4
	45	14·71	47	510·1	48	799·0
	50	16·01	52	511·4	53	800·8
	55	17·83	57	512·4	58	800·4
10 13	0	19·02	2	512·9	3	799·2
	5	19·44	7	513·2	8	798·1
	10	19·89	12	513·3	13	796·9
	15	19·55	17	513·5	18	795·6
	20	19·24	22	512·4	23	794·3
	30	19·24	32	508·9	33	793·7
	55	18·43	57	516·3	58	794·3
10 14	0	17·26	2	517·9	3	792·5
	5	16·48	7	516·7		
	10	16·79	12	516·4	13	794·9
	15	16·79	17	517·8		
	20	17·54	22	516·6		
	30	17·63	32	519·0	33	792·4
	45	18·25	47	514·4	48	795·1
10 15	0	19·28	2	517·7	3	788·2
10 16	0	20·85	2	515·7	3	785·3
	5	20·35	7	516·5		
	10	21·03	12	514·8	13	786·8
	15	20·99				
10 17	0	21·97	2	517·3	3	787·7
	10	22·04	12	517·3	13	787·7
10 18	0	21·03	2	518·8	3	787·5
10 19	0	21·29	2	517·8	3	786·8
	10	22·67	12	516·2	13	788·6
	15	23·41	17	514·8		
	20	23·68	22	514·4	23	789·6
	31	24·22				
	35	23·68	37	512·4	38	787·4
	45	23·14	47	514·4	48	786·1
10 20	0	22·60	2	517·3	3	784·5
	25	21·53	27	517·7		
10 21	0	21·03	2	518·9	3	778·8
11 12	0	25 17·68	2	516·1	3	796·8
	10	16·86	12	514·6	13	794·0
	20	16·75	22	510·7	23	796·9
	30	16·08	32	509·2		
11 13	0	19·29	2	508·1	3	795·2
12 9	0	25 20·02	2	516·0	3	797·9
	15	16·79	17	516·3	18	798·4
	20	12·51	22	513·4	23	797·0
	25	09·64	27	520·2	28	793·8
	30	06·86	32	526·4	33	791·0
	35	06·67	37	526·9	38	794·5
	40	06·86	42	529·6	43	792·3
	45	08·19	47	532·1	48	791·6
	50	09·77	52	531·5	53	789·7
	55	11·28	57	529·4	58	788·1
12 10	0	12·72	2	524·5	3	787·5
	5	13·29	7	522·9	8	784·3
	10	13·74	12	521·1	13	785·2
	15	15·71	17	517·4	18	789·0
	20	16·99	22	513·1	23	791·6
	25	17·42	27	513·8		

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
12 10	30	25 18·18	32	514·8	33	790·2
	35	18·92	37	513·7		
	40	19·51	42	514·1	43	789·1
	45	20·15	47	516·8	48	788·6
	50	21·09	52	515·2		
	55	21·79	57	514·5	58	792·1
12 11	0	21·53	2	515·5	3	784·5
17 8	0	25 21·68	2	516·9	3	792·4
	10	20·83	12	512·6	13	797·7
	15	20·00	17	512·4	18	798·7
	20	19·42	22	512·6	23	799·8
	25	18·74	27	514·8	28	800·8
	30	17·54	32	512·4	33	802·1
	35	16·73	37	517·2		
	40	17·36	42	517·9	43	803·1
	50	18·70	52	517·7		
17 9	0	19·26	2	519·4	3	801·0
18 10	0	25 19·51	2	519·2	3	779·9
	50	17·04	52	517·6	53	781·5
	55	15·32	57	516·7	58	780·4
18 11	0	13·49	2	517·1	3	780·9
	5	11·54	7	519·2	8	780·0
	10	10·97	12	520·4	13	780·7
	15	10·67	17	518·3	18	782·8
	20	10·09	22	516·5	23	784·6
	25	09·73	27	514·7	28	785·4
	30	10·70	32	512·1	33	787·8
	35	12·11	37	508·8	38	792·7
	40	16·32	42	506·3	43	794·6
	45	18·47	47	508·2	48	790·6
	50	19·44	52	513·3	53	781·8
	55	19·61	57	514·3	58	775·2
18 12	0	19·41	2	516·8	3	770·5
	5	18·75	7	518·8	8	766·1
	10	18·03	12	516·1	13	763·2
	15	15·49	17	515·3	18	760·6
	20	13·47	22	517·2	23	761·5
	25	12·85	27	519·2	28	762·0
	30	13·59	32	520·3	33	763·3
	35	15·04	37	520·1	38	766·6
	40	16·72	42	519·1	43	768·5
	45	18·05	47	519·8	48	768·7
	50	19·15	52	519·7	53	769·0
	55	20·45	57	518·5	58	770·1
18 13	0	20·85	2	515·9	3	769·5
	10	20·52	12	514·7	13	771·0
	15	19·95	17	516·2	18	770·0
	20	19·51	22	517·5	23	768·4
	25	19·07	27	518·1		
18 14	0	20·18	2	518·8	3	769·9
	20	19·58	22	519·2	23	806·1
18 15	0	20·42	2	519·9	3	768·9
19 12	0	25 20·36	2	519·1	3	778·1
	10	20·89	12	515·4	13	777·9
	15	20·05	17	519·5		
	20	20·38	22	518·7	23	776·6
19 13	0	18·77	2	516·5	3	781·8
	10	19·98	12	516·8	13	781·4

Gött. Mean Time.	Declination.	
d. h.	Min.	° ′
19 13	15	25 19·61
	25	18·81
	35	19·08
19 14	0	18·94
19 15	0	16·95
	10	16·73
	15	17·06
	30	17·47
19 16	0	18·38
20 11	0	25 18·50
	10	16·48
	15	16·18
	20	15·99
	25	15·39
	30	15·29
	35	14·80
	40	14·68
	45	15·12
	50	16·21
	55	16·84
20 12	0	17·65
	5	18·43
	10	18·90
	15	19·02
	20	19·42
	25	19·17
	30	19·31
21 14	0	25 19·10
	5	19·82
	30	19·68
21 15	0	20·09
22 3	0	24·25
	15	25·43
	20	25·06
	25	24·77
	30	24·33
	35	23·85
	45	23·54
	50	23·24
	55	23·22
22 4	0	23·05
22 6	0	22·91
	10	23·27
	15	21·32
	20	20·70
	25	20·40
	30	23·12
	35	24·46
	40	24·35
	45	24·12
	50	24·35

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
17	517·2	18	779·5	22 6	55	25 23·01	57	512·9	58	818·5	27 10	20	25 10·38	22	529·9		
27	514·7	28	781·7	22 7	0	22·10	2	513·2	3	828·1		25	11·81	27	530·2		
37	513·7	38	784·1		5	21·50	7	513·2	8	826·8		30	14·11	32	528·3		
2	516·1	3	783·5		30	21·24	32	517·8	33	819·5		35	15·71	37	524·9		
2	516·6	3	783·9		35	21·06					27 11	5	16·62	7	520·9		
12	517·5	13	782·7	22 8	0	21·83	2	514·7	3	813·2							
				22 14	0	19·46	2	518·5	3	780·1	28 13	0	25 17·04	2	514·8	3	746·9
32	514·4	33	785·6		7	18·70						10	16·01				
2	517·5	3	784·0		15	19·04						15	16·15	17	512·7	18	750·7
				22 15	0	19·69	2	518·3	3	782·3		25	17·49	27	513·8	28	749·2
2	519·8	3	780·5	22 18	0	17·71	2	523·4	3	770·1	28 14	0	18·82	2	516·2	3	744·9
12	528·6	13	771·9		5	17·36					28 16	0	22·30	2	516·9	3	748·1
17	527·6	18	773·8		15	17·71						5	23·14	7	517·0	8	748·0
22	523·9	23	775·6	22 19	0	18·30	2	523·6	3	770·2		10	23·48	12	515·8		
27	522·2	28	775·9									15	22·65	17	515·8	18	744·6
32	520·0			23 6	0	25 24·08	2	527·9	3	777·5		20	21·77	22	517·1	23	742·8
37	519·0	38	776·9		10	23·54						25	21·42				
42	519·5				20	23·99	22	528·5				40	19·24	42	519·4	43	741·1
47	518·5	48	780·2		25	23·41	27	529·6	28	777·0		45	18·72				
52	516·4				30	23·61	32	529·9			28 17	0	17·73	2	516·7	3	745·4
57	516·5	58	781·1		35	24·25	37	529·9	38	778·8		10	18·81	12	514·5	13	750·7
2	517·5	3	781·2		40	24·69	42	527·8	43	779·6	28 18	0	18·68	2	519·9	3	748·7
7	517·7	8	780·6		45	24·85	47	527·8	48	780·3							
12	518·3				50	25·17	52	527·9	53	779·6	29 9	0	25 20·32	2	513·7	3	793·0
17	519·5	18	776·4		55	25·56	57	525·9	58	802·1		10	19·14	12	513·3	13	795·5
22	520·3			23 7	0	25·58	2	524·1	3	783·6		15	18·79	17	514·3		
27	521·1	28	779·0		5	24·75	7	526·9	8	787·0		25	17·51	27	516·1	28	793.9
32	520·4	33	779·8		10	24·46	12	527·1	13	789·6		30	17·47				
					15	25·24	17	526·5	18	793·4	29 10	0	18·20	2	516·8	3	789·3
2	518·3	3	779·0		20	24·93	22	525·9	23	792·0	30 7	0	13·46	2	522·1	3	785·5
7	519·1	8	779·2		25	24·70	27	526·0	28	793·4		10	15·59	12	524·3	13	784·1
32	520·1	33	775·8		30	24·19						15	16·97	17	524·8		
2	520·6	3	776·1	23 8	0	24·25	2	523·2	3	795·2		20	18·65	22	524·1	23	782·0
2	511·2	3	794·5									25	19·53	27	522·5	28	781·8
17	513·2	18	796·0	25 11	45	25 19·64	47	519·5	48	763·0		30	20·23	32	521·0	33	780·7
22	509·9			25 12	0	19·88	2	517·2	3	765·5	30 8	0	19·44	2	521·1	3	775·8
27	509·5	28	795·1								30 12	0	15·44	2	529·6	3	747·0
32	510·2	33	794·0	26 11	0	25 15·12	2	513·6	3	771·7		5	15·47	7	530·8	8	744·2
37	512·5	38	793·3		10	16·86	12	515·7	13	774·9		10	15·49	12	530·6	13	743·5
47	519·2	48	789·8		15	18·35	17	518·5	18	772·5		15	15·52	17	527·5	18	743·7
52	516·9	53	788·7		20	18·75	22	517·1	23	771·6		20	15·47	22	524·0	23	743·2
57	516·3	58	789·4		25	18·99	27	515·6	28	772·7		25	15·13	27	522·6	28	742·3
2	518·0	3	790·1		30	19·28	32	516·6	33	773·2		30	14·35	32	521·8	33	742·3
2	518·5	3	820·2		35	19·35	37	517·6	38	771·8		35	14·13	37	519·9	38	743·3
11	509·4				40	19·46	42	518·6	43	771·1		40	13·99	42	518·6	43	743·1
12	511·6	13	826·4		45	19·22	47	517·5	48	770·0		45	14·11	47	517·9	48	743·8
17	524·8	18	816·7		50	18·77	52	518·5				50	14·33	52	516·9	53	745·1
21	520·6				55	17·73	57	519·6	58	768·5		55	14·60	57	517·8	58	745·2
22	518·3			26 12	0	17·24	2	519·7	3	767·6	30 13	0	14·85	2	518·2	3	744·7
23	515·6	23	821·9		5	17·02	7	520·2	8	767·3							
26	511·9				10	16·82	12	518·7	13	769·0	31 8	0	25 18·16	2	510·1	3	787·2
27	511·3			26 13	0	17·06	2	511·7	3	772·8		5	18·57	7	509·9	8	793·1
28	511·9	28	828·5		10	18·03	12	511·4	13	774·0		10	18·77	12	509·9	13	795·3
31	514·2				15	18·14	17	513·7	18	774·1		15	18·75	17	511·5	18	798·3
32	514·0				20	17·70	22	516·9	23	773·1		40	06·77	42	524·3	43	794·8
33	512·6	33	830·7		25	17·80	27	517·1	28	772·2		45	04·59	47	532·9	48	791·4
37	510·0			26 14	0	20·03	2	516·1	4	770·4		50	06·37	52	532·7	53	789·9
38	509·4	38	832·5		10	19·61	12	515·1	13	770·3		55	08·79	57	528·3	58	788·2
42	509·2	43	822·8	26 15	0	20·85	2	515·4	3	771·6	31 9	0	09·88	2	522·7	3	788·6
47	512·5	48	821·8									5	11·25	7	516·6	8	789·7
52	513·0	53	820·6	27 10	0	25 19·46	2	516·2				10	11·98	12	512·9	13	790·6

BIFILAR. k=0 000140. BALANCE. k=0·0000085.

Jan. 27d 10h 20m. This was the time of the least declination during this disturbance.

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
31	9	15	25	12·73	17	506·7	18	794·6
		20		12·78	22	502·5	23	798·5
		25		12·35	27	505·3	28	798·1
		30		13·52	32	510·7	33	797·8
		35		16·08	37	512·3	38	796·3
		40		18·70	42	514·1	43	794·3
		45		20·77	47	515·2	48	791·8
		50		21·43	52	512·5	53	789·3
		55		20·96	57	509·1	58	787·9
31	10	0		19·64	2	509·9	3	787·1
		5		18·60	7	512·9	8	785·4
		10		18·84	12	515·4	13	784·7
		15		19·34				
		25		19·44	27	518·9	28	778·9
		30		19·58				
31	11	0		19·31	2	521·6	3	775·6
31	15	0		21·05	2	525·9	3	765·8
		10		24·25	12	526·0	13	761·8
		15		24·75	17	526·1	18	758·6
		20		24·15	22	524·9	23	755·7
		25		22·87	27	522·1	28	754·5
		30		21·24	32	522·5	33	753·8
		35		20·89	37	523·7		
		45		19·37	47	521·8	48	754·3
		50		18·82	52	521·7	53	756·1
		55		18·77	57	522·3		
31	16	0		19·14	2	523·5	3	758·1
31	17	0		17·91	2	528·8	3	753·0
		20		18·20	22	530·3	23	746·7
		25		17·56	27	532·0	28	748·4
		30		16·93	32	531·3		
31	18	0		17·15	2	522·6	3	754·5
		10		16·82	12	519·1	13	755·1
		20		17·29	22	520·1	23	755·0
31	19	0		16·55	2	519·9	3	753·8
1	3	0	25	26·97	2	525·5	3	779·3
		5		27·61	7	523·3	8	785·3
		10		28·94	12	531·1	13	788·6
		15		30·00	17	524·4	18	790·4
		20		28·83	22	517·7	23	790·7
		25		28·72	27	513·3	28	794·8
		30		27·89	32	515·2	33	794·6
		50		27·89	52	531·2	53	809·6
		55		27·62	57	528·5	58	812·9
1	4	0		28·27	2	522·8	3	817·9
		5		25·26	7	520·5	8	816·2
		10		25·31	12	524·5		
		15		25·73	17	519·2	18	819·7
		20		26·32	22	517·0	23	825·2
		25		25·43	27	513·4	28	836·7
		30		24·84	32	508·9	33	848·8
		35		22·67	37	509·1	38	860·6
		40		19·79	42	507·3	43	869·8
		45		10·18				
		47		09·42	47	514·1	48	864·9
		50		10·70	52	522·8	53	858·7
		55		12·85	57	528·0	58	858·2
1	5	0		17·78	2	519·3	3	857·9
		5		16·92	7	519·8	8	855·3
		10		18·08	12	519·4	13	853·4

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
1	5	15	25	20·23	17	511·8	18	855·0
		20		20·49	22	503·3	23	854·5
		25		17·49	27	510·4	28	850·5
		30		19·41	32	514·4	33	847·7
		35		21·23	37	512·6	38	846·7
		40		21·39	42	515·7	43	843·0
		45		22·77	47	519·1	48	839·7
		50		24·67	52	524·0	53	837·1
		55		27·76	57	520·9	58	836·7
1	6	0		30·05	2	515·0	3	841·7
		5		29·30	7	509·1	8	843·7
		10		27·01	12	510·6	13	840·7
		15		24·30	17	514·1	18	844·0
		20		23·96	22	518·3	23	843·7
		25		24·26	27	520·7	28	841·9
		30		25·67	32	522·1	33	839·3
		35		26·21	37	518·9	38	839·1
		40		25·78	42	516·8	43	838·6
		45		24·69	47	516·8	48	838·1
		50		24·12	52	517·1	53	837·8
		55		23·39	57	517·5	58	836·1
1	7	0		24·15	2	517·0	3	835·8
		10		21·90	12	519·1	13	831·4
		15		22·33	17	520·1	18	830·2
		30		19·93	32	520·7	33	827·6
		35		19·24	37	514·8	38	832·9
		40		16·92	42	514·9	43	834·2
		45		15·49	47	518·4	48	834·6
		50		16·08	52	517·4	53	833·9
		55		16·63	57	517·8	58	832·2
1	8	0		17·15	2	515·2	3	833·6
		10		17·46	12	513·1	13	834·6
		15		16·41	17	516·2	18	832·7
		20		14·73	22	520·5	23	829·2
		25		15·49	27	520·1	28	828·3
		30		15·47	32	516·5	33	829·5
		35		12·55	37	523·3	38	826·3
		40		11·91	42	534·0	43	817·9
		45		07·32	47	541·0	48	807·5
		50		06·32	52	543·7	53	797·9
		55		06·16	57	551·8	58	785·6
1	9	0		09·02	2	554·4	3	781·1
		5		12·04	7	541·3	8	779·5
		10		14·26	12	534·5	13	779·0
		15		14·91	17	517·0	18	778·1
		20		08·68	22	523·5	23	770·1
		25		07·74	27	530·7	28	763·0
		30		09·30	32	527·5	33	760·2
		35		10·90	37	524·8	38	758·6
		40		11·14	42	518·1	43	754·9
		45		08·12	47	519·3	48	757·2
		50		07·87	52	525·0	53	751·8
		55		10·70	57	522·9	58	751·1
1	10	0		13·16	2	511·2	3	753·7
		5		12·29	7	507·5	8	757·5
		10		13·34	12	506·4	13	760·2
		15		15·47	17	496·3	18	767·2
		20		13·70	22	493·9	23	771·5
		25		11·24	27	500·5	28	770·6
		30		10·81	32	507·1	33	771·4
		40		13·97	42	511·5	43	774·1

Gött. Mean Time.		Declination.		
d.	h.	Min.	°	′
1	10	45	25	15·15
		50		15·74
		55		16·26
1	11	0		17·02
		5		16·93
		10		17·42
		15		17·67
		20		17·91
		25		18·23
		30		18·84
		35		19·26
		40		19·01
1	12	0		17·87
1	18	0	25	16·65
		5		17·36
		10		17·65
		15		17·02
		20		16·70
		25		16·10
		30		15·42
		35		15·25
		40		14·85
		45		14·64
		50		14·80
		55		15·47
1	19	0		16·35
		40		18·40
1	20	0		18·84
2	5	0	25	22·65
		10		20·52
		15		17·47
		20		12·92
		25		11·32
		30		11·10
		35		12·76
		40		13·23
		45		11·44
		50		11·41
		55		12·11
2	6	0		15·41
		5		17·20
		10		17·00
		15		13·27
		20		11·57
		25		08·16
		30		08·11
		35		11·15
		40		13·72
		45		16·57
		50		17·51
		55		17·54
2	7	0		20·40
		5		24·97
		10		27·21
		15		26·28
		20		27·91
		25		26·77
		30		25·02
		35		23·99

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
7	512·1	48	774·8	2 7	40	25 24·17	42	515·4	43	818·4	2 13	55	25 19·21	57	509·6	58	715·8
2	511·0	53	776·1		45	24·28	47	517·5	48	812·3	2 14	0	19·01	2	510·1	3	715·6
7	512·6	58	776·9		50	23·61	52	518·1	53	808·5		5	19·01	7	509·0	8	715·2
2	512·7	3	776·8		55	22·94	57	520·8	58	803·0		10	17·09	12	510·4	13	713·5
7	511·6	8	778·3	2 8	0	22·87	2	520·0	3	800·7		15	15·58	17	511·3	18	711·0
2	511·8	13	777·7		5	22·89	7	518·9	8	797·7		20	13·12	22	515·5	23	708·7
7	512·3	18	777·5	2 9	0	20·02	2	520·5	3	774·9		25	11·49	27	517·7	28	708·3
22	512·5	23	777·0	2 11	0	17·49	2	517·1	3	763·9		30	10·41	32	516·1	33	709·1
27	513·5	28	776·6		5	17·49						35	10·21	37	512·5	38	711·6
32	514·6	33	776·7		10	19·17	12	511·3	13	754·5		40	09·52	42	511·3	43	716·1
37	516·0	38	776·2		15	19·05	17	508·5	18	750·6		45	10·77	47	508·1	48	718·8
42	516·2	43	774·6		20	21·50	22	520·2	23	734·8		50	12·56	52	503·5	53	724·9
2	512·2	3	777·7		25	22·91	27	511·0	28	704·3		55	13·16	57	501·1	58	727·3
					30	22·87	32	506·5	33	671·4	2 15	0	13·52	2	502·4	3	728·4
2	518·4	3	765·5				34	504·5				5	14·20	7	503·3	8	729·7
7	518·4	8	767·1		35	24·69	36	500·5				10	14·20	12	505·4	13	730·9
12	518·9	13	767·0				37	499·7	38	655·3		15	14·28	17	506·7	18	733·2
17	519·1						39	494·0				20	15·34	22	506·4	23	735·4
22	519·3	23	763·6		40	25·43	41	489·9				25	15·81	27	507·6	28	739·3
27	518·4						42	487·8	43	653·5		30	16·21	32	509·1	33	739·4
32	517·9	33	763·5				44	485·5				35	16·89	37	510·2	38	740·6
37	517·6				45	21·83	46	492·7				40	17·83				
42	517·5	43	764·6				47	494·7	48	660·3	2 16	0	17·44	2	506·9	3	735·4
47	517·0						49	495·4				5	16·82	7	508·5	8	736·0
52	517·7	53	769·8		50	20·90	51	490·4				10	16·99	12	509·8	13	735·7
57	516·8						52	485·9	53	658·3		15	18·00	17	510·1	18	739·3
2	516·4	3	772·1				54	483·3				20	18·81				
42	513·1	43	771·2		55	21·12	56	485·8			2 17	0	17·08	2	505·1	3	717·7
2	513·5	3	774·8				57	482·8	58	648·3		5	16·68	7	506·0	8	714·2
							59	480·5				10	15·54	12	512·2	13	712·9
2	516·4	3	778·1	2 12	0	17·54	2	481·8	3	670·1		15	15·49	17	514·2	18	711·1
12	512·3	13	776·0		5	09·39	6	490·6				20	15·81	22	513·4	23	711·4
17	508·4	18	791·5				7	494·1	8	688·3		25	16·50	27	513·7	28	714·6
22	510·5	23	797·4				9	503·0				30	17·78	32	517·1	33	718·5
27	510·3	28	805·4		10	04·01	11	511·3				45	22·62	47	518·6		
32	511·7	33	813·0				12	514·5	13	682·6		50	22·57	52	516·7	53	710·9
37	513·4	38	815·3				14	518·2				55	20·92	57	522·7	58	707·4
42	513·4	43	812·8		15	06·54	16	518·9			2 18	0	21·21	2	522·8	3	703·5
47	511·2	48	813·7				17	517·8	18	675·2		5	18·84	7	524·8	8	700·5
52	509·1	53	815·8				19	516·9				10	20·30	12	528·2	13	699·0
57	511·2	58	817·2		20	10·58	21	516·0				15	20·18	17	529·8	18	697·5
2	504·9	3	827·2				22	515·1	23	678·8		20	20·11	22	531·0	23	695·5
7	495·3	8	835·1				24	512·7				25	20·22	27	530·0	28	695·4
12	495·2	13	842·3		25	13·12	27	508·7	28	690·9		30	19·46	32	531·9	33	697·0
17	496·0	18	845·6				29	506·7				35	19·68	37	532·7	38	696·1
22	508·8	23	835·1		30	13·56	32	506·9	33	705·6		40	20·55	42	528·0	43	698·0
27	505·7	28	838·1		35	11·00	37	513·4	38	711·7		45	20·23	47	526·3	48	698·8
32	508·6	33	839·0				39	516·7				55	19·75	57	525·2	58	702·7
37	511·4	38	839·7		40	11·66	42	516·7	43	715·0	2 19	0	19·55	2	525·0	3	704·2
42	515·8	43	836·6				44	515·6				5	18·90	7	525·7		
47	520·2	48	831·1		45	11·72	47	516·2	48	717·4		10	18·47	12	524·9	13	707·0
52	517·6	53	831·4				49	517·3				15	17·89	17	524·9		
57	520·2	58	824·8		50	11·01	52	517·7	53	716·7		20	17·53	22	524·6	23	710·9
2	514·7	3	823·5		55	10·98	57	516·2	58	717·8		25	17·60	27	522·0	28	714·2
7	507·8	8	832·9	2 13	0	11·00	2	513·6	3	719·6		30	17·55				
12	504·2	13	833·0		5	10·07	7	515·3	8	719·5	2 20	0	18·60	2	516·5	3	730·8
17	508·6	18	829·7		10	10·13	12	516·0	13	717·0							
22	503·7				15	10·67	17	516·5	18	717·4	3 7	0	25 22·18	2	522·6	3	772·9
27	500·7	28	832·7		40	17·09	42	511·0	43	713·8		15	16·75	17	493·6	18	804·6
32	504·5	33	828·0		45	18·07	47	508·2	48	713·8		20	11·98	22	493·7	23	814·0
37	510·8	38	822·1		50	19·51	52	506·8	53	715·8		25	09·15	27	498·5	28	818·0

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

Gött. Mean Time.		Declination.		Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
3	7	30	25 09·29	32	499·9	33	823·0
		35	09·42	37	512·9	38	814·1
		40	02·73	42	540·1	43	791·4
				44	551·1		
		45	04·07	46	552·9		
				47	550·7	48	782·0
				49	550·1		
		50	07·84	52	550·6	53	770·8
				54	547·5		
		55	13·10	56	540·4		
				57	536·6	58	777·4
3	8	0	12·13	2	527·8	3	776·0
		5	13·66	7	524·4	8	772·7
		10	14·77	12	526·3	13	772·3
		15	16·89	17	522·3	18	772·3
		20	17·89				
3	9	0	15·47	2	516·8	3	770·8
		5	15·51	7	516·5	8	771·5
3	10	0	18·16	2	516·7	3	773·3
3	11	0	13·61	2	517·6	3	772·9
		10	14·48	12	520·0	13	764·1
		20	14·67	22	512·0	23	768·0
		25	13·16	27	515·2	28	768·2
		30	11·66	32	520·4	33	760·3
		35	10·67	37	527·6	38	759·1
		40	11·03	42	534·4	43	754·1
		45	12·73	47	533·5	48	752·6
		50	12·58	52	531·4	53	749·0
		55	12·22	57	533·8	58	744·8
3	12	0	12·20	2	532·6	3	743·4
		5	12·28	7	530·5	8	741·5
		10	12·22	12	528·8	13	739·3
		15	11·44	17	528·9	18	735·7
		20	09·62	22	532·0	23	730·4
		25	08·88	27	530·2	28	726·7
		30	08·85	32	525·2	33	725·8
		35	08·48	37	520·3	38	726·5
		40	08·14	42	516·2	43	726·5
		45	07·72	47	515·4		
		50	07·40	52	514·4	53	723·5
3	13	0	06·05	2	509·0	3	723·0
		15	08·65	17	494·3	18	729·6
		20	08·21	22	487·2	23	735·6
		25	08·55	27	486·1	28	742·8
		40	17·70	42	494·8	43	745·3
4	0	50	25 25·26	52	510·8	53	802·0
4	1	2	24·62	3	511·0	3	802·0
4	13	0	25 18·37	2	516·8	3	760·3
		20	20·03	22	519·8	23	757·8
		30	19·61	32	518·7	33	754·7
4	14	0	23·01	2	514·5	3	750·8
		5	22·91	7	516·0	8	750·2
		10	22·65	12	515·8	13	746·7
		15	21·41	17	514·9	18	745·9
		20	20·77	22	515·2		
		25	20·85	27	515·5		
4	15	0	20·70	2	513·9	3	736·6
		15	18·50	17	518·4	18	735·3
		20	17·94	22	519·5	23	735·6

Gött. Mean Time.		Declination.		Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
4	15	25	25 17·56	27	519·8		
		30	17·51	32	519·9	33	736·0
4	16	0	16·62	2	516·9	3	743·7
		10	17·46	12	516·7	13	749·4
		15	18·03	17	517·2	18	749·3
4	17	0	19·05	2	517·1	3	751·4
4	18	0	17·56	2	520·9	3	747·8
		10	17·19	12	521·9	13	747·8
		15	16·99	17	521·9		
		20	16·82	22	521·5	23	747·0
		25	16·66	27	520·3	28	749·4
		30	16·73	32	520·0	33	752·4
		35	17·76	37	519·5	38	753·5
		40	18·47	42	520·3	43	756·0
		45	18·99	47	519·4	48	755·6
		50	18·92	52	520·7	53	755·4
		55	19·68	57	520·5	58	752·5
4	19	0	18·43	2	520·9	3	754·5
		35	18·58	37	522·9	38	750·9
4	20	0	18·63	2	522·2	3	750·4
4	23	0	21·79	2	511·4	3	759·4
		25	22·84	27	504·1	28	764·4
		30	22·27	32	505·3	33	762·6
5	0	0	25·51	2	502·8	3	766·1
		20	25·63	22	501·0	23	763·9
5	1	0	25·68	2	505·7	3	765·8
5	3	0	25·76	2	523·8	3	788·0
		15	23·83	17	520·1	18	784·8
		20	23·59	22	520·2		
5	4	0	21·59	2	512·2	3	794·2
5	7	0	19·10	2	513·9	3	839·6
		5	09·69	7	532·5	8	876·5
		10	25 01·72	12	532·3	13	893·8
		15	24 56·16	17	534·7	18	840·4
		20	25 09·02	22	537·6	23	817·1
		25	14·28	27	547·5	28	809·7
		30	17·37	32	518·8	33	806·8
		35	13·57	37	508·9	38	796·7
		40	11·28	42	523·7	43	792·8
		45	14·53	47	521·7	48	778·1
		50	15·45	52	528·1	53	770·8
		55	18·11	57	524·8	58	772·7
5	8	0	18·72	2	515·0	3	775·4
		5	18·90	7	507·5	8	782·3
		10	18·32	12	507·4	13	791·5
		15	19·62	17	505·2	18	796·6
		20	19·51	22	501·7	23	800·9
		25	18·14	27	504·8	28	804·3
		30	16·84	32	509·3	33	807·3
		35	16·12	37	509·1	38	812·5
		40	13·47	42	507·9	43	818·5
		45	12·23	47	516·0	48	815·4
		50	15·94	52	512·8	53	818·8
		55	16·82	57	511·9	58	820·7
5	9	0	16·57	2	512·5	3	819·5
		5	12·43	7	516·5	8	818·1
		10	07·69	12	531·4	13	805·3
		15	12·22	17	526·0	18	801·8
		20	16·26	22	518·8	23	799·6
		25	20·55	27	507·7	28	798·4
		30	21·34	32	509·6	33	784·9

Gött. Mean Time.		Declination.	
d.	h.	Min.	° ′
5	9	35	25 22·20
		40	21·03
		45	15·96
		50	23·73
		55	30·25
5	10	0	27·01
		5	20·79
		10	20·79
		15	18·41
		20	13·43
		25	12·06
		30	11·51
		35	11·46
		40	13·34
		45	15·31
		50	15·81
		55	14·55
5	11	0	12·62
		5	11·42
		10	10·74
		15	15·79
		20	20·40
		25	21·81
		30	23·07
		35	23·01
		40	21·53
		45	18·61
		50	17·49
		55	21·59
5	12	0	23·34
		5	22·72
		10	23·58
		15	25·29
		20	25·96
		25	25·02
		30	21·83
		35	19·44
		40	17·46
		45	18·16
		50	18·47
		55	18·63
5	13	0	17·42
		5	17·15
		10	17·49
		14	18·16
		25	13·67
		30	11·54
		35	11·19
		43	12·38
		45	12·20
		50	13·64
		55	16·08
5	14	0	18·10
		5	18·73

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

Feb. 4d 1h (Sunday). In the observations given the magnets have not changed their positions much, but there is evidently a disturbance: the declination and bifilar magnets are vibrating much and irregularly. At 4d 7h 50m a moderate disturbance was noticed, such as on several preceding evenings.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.			Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.			Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
37	504·1	38	782·7	5 14	10	25	19·39	12	505·8	13	740·6	6 10	45	25	16·30				
42	499·9	43	790·6		15		19·44	17	508·5	18	741·2	6 11	0		16·52	2	519·0	3	739·7
47	516·3	48	785·3		20		19·95	22	508·8	23	743·8		15		17·89	17	516·0	18	741·9
52	521·1	53	755·5		25		21·41	27	511·2	28	745·5	6 12	0		17·42	2	518·7	3	744·0
57	504·5	58	745·9		30		22·28	32	511·2	33	741·2	6 13	0		19·39	2	516·8	3	751·5
2	504·0	3	746·4		35		21·76	37	512·2	38	735·4		30		23·25	32	514·5	33	742·2
7	514·1	8	756·0		40		22·20	42	507·2	43	728·9		35		22·33	37	513·6	38	739·6
12	513·7	13	770·7		45		21·80	47	500·8	48	725·3		40		20·80	42	514·5	43	736·7
17	508·3	18	773·4		50		20·58	52	497·4	53	724·0		45		19·75	47	515·6	48	736·7
22	511·6	23	775·3		55		19·50	57	499·8	58	726·6		50		19·31	52	516·2	53	735·6
27	513·8	28	773·6	5 15	0		18·70	2	504·2	3	729·5		55		19·21	57	515·3	58	736·3
32	516·4	33	774·4		5		19·51	7	503·4	8	706·3	6 14	0		18·81	2	515·4	3	737·7
37	520·7	38	773·5		10		19·31	12	507·9	13	716·7		15		19·07	17	513·8	18	742·0
42	522·1	43	773·3		15		19·51	17	508·0	18	723·2	6 15	0		19·10	2	515·3	3	748·6
47	521·6				20		19·71					6 16	0		16·79	2	513·4	3	754·4
52	519·2	53	777·9	5 16	0		19·58	2	513·3	3	759·8		15		17·42	17	512·8	18	759·5
57	515·6	58	780·4		10		18·03	12	510·4	13	759·1	6 17	0		18·23	2	513·9	3	758·3
2	515·4	3	778·0		15		18·84	17	506·1	18	756·4								
7	518·2	8	772·6		20		19·76	22	500·4	23	753·0	7 6	0	25	17·22	2	515·9	3	783·8
12	527·1	13	761·9		25		20·79	27	497·7	28	749·7		15		12·78	17	512·8	18	794·4
17	515·5	18	761·0		30		20·97	32	496·0	33	743·4		20		12·95	22	515·0	23	797·8
19	517·3				35		20·45	37	497·5	38	738·4		25		14·06	27	516·7	28	798·7
21	514·5				40		20·56	42	498·9	43	736·0		30		14·80	32	517·4	33	799·2
22	513·2	23	748·2	5 17	0		22·91	2	511·7	3	752·1		35		15·44	37	518·7	38	796·8
24	509·5				5		23·34	7	513·5	8	754·5		50		16·95	52	521·5	53	790·0
27	504·8	28	734·6		10		23·43	12	514·9	13	756·3	7 7	0		18·68	2	522·1	3	787·0
29	501·7				15		24·32	17	514·2	18	756·0		15		20·18	17	519·9	18	783·5
31	500·7				20		24·32	22	513·5	23	757·6	7 8	0		20·85	2	520·5	3	771·5
32	500·7	33	723·9		25		23·95						5		18·60	7	516·1	8	777·9
34	499·8			5 18	0		21·32	2	517·8	3	747·4		10		20·85	12	510·1	13	783·2
37	498·6	38	733·3		10		19·39	12	517·3	13	749·0		15		19·98	17	518·5	18	777·2
42	499·7	43	727·6		15		18·50	17	520·0	18	751·4		20		19·51	22	521·0	23	774·9
47	504·7	48	729·6		20		18·81	22	521·2	23	754·2		25		19·61	27	519·3	28	776·3
52	512·5				25		19·48	27	520·3	28	755·3		30		20·18	32	515·0	33	778·8
57	505·3	58	738·1	5 19	0		18·79	2	519·3	3	752·4		35		19·71	37	516·4	38	778·1
2	502·6	3	737·9										40		19·28	42	517·4	43	778·1
7	504·8	8	731·5	6 6	0	25	16·38	2	512·7	3	798·4	7 9	0		09·89	2	500·7	3	785·8
12	505·7	13	724·4		10		14·80	12	506·9	13	790·0		5		06·01	7	501·7	8	786·1
17	499·9	18	719·5		15		11·57	17	509·2	18	788·5		10	25	01·12	12	506·3	13	784·0
22	493·5	23	714·6		20		08·38	22	517·9	23	787·0		14	24	59·19				
27	492·2	28	712·6		25		08·68	27	522·3	28	785·6		15	25	00·18	17	523·2	18	778·9
32	497·5	33	713·8		30		08·45	32	525·7	33	784·6					19	526·6		
37	503·3	38	713·2		35		08·56	37	527·7	38	783·1		20		08·18	22	522·9	23	772·6
42	509·9	43	714·5		40		10·18	42	526·7	43	782·5		25		12·22	27	521·0	28	763·4
47	512·8	48	717·6		45		11·46						30		09·02	32	520·9	33	754·1
52	513·0	53	716·3		55		12·25	57	522·5	58	779·5		35		01·78	37	531·2	38	738·2
57	513·4	58	710·2	6 7	0		12·95	2	522·8	3	779·0		40		03·30	42	529·5	43	733·1
2	519·1	3	701·1		5		13·84	7	522·3	8	775·6		45		03·25	47	521·6	48	731·6
7	520·0	8	698·5		10		15·01	12	521·3	13	774·3		50		02·45	52	518·1	53	731·0
12	518·1	13	694·6		15		15·91						55		02·45	57	509·4	58	733·7
				6 8	0		19·58	2	520·8	3	763·1	7 10	0		01·31	2	506·0	3	736·5
22	499·9	23	683·9	6 9	0		17·89	2	521·1	3	762·2		5		01·21	7	508·1	8	736·4
27	501·3	28	689·3	6 10	0		20·03	2	547·4	3	735·2		10		04·07	12	500·3	13	740·3
32	509·3	33	697·8		5		19·41	7	541·9	8	731·0		15		05·05	17	493·3	18	744·8
37	507·0	38	707·5		10		19·55	12	531·8	13	729·3		20		03·97	22	495·5	23	743·9
42	501·9	43	715·5		15		18·23	17	527·6	18	728·6		25		04·98	27	500·8	28	742·2
47	504·5	48	716·9		20		16·66	22	528·1	23	728·3		30		08·06	32	501·0	33	745·0
52	494·8	53	725·2		25		16·92	27	525·3	28	729·9		35		10·18	37	500·2	38	747·1
57	495·1	58	729·7		30		17·15	32	520·0	33	731·9		40		11·37	42	501·0	43	746·3
2	498·9	3	735·2		35		16·19	37	519·3	38	733·0		45		11·84	47	502·9	48	745·7
7	503·0	8	739·6		40		16·15	42	519·0	43	732·7		50		13·19	52	501·3	53	746·9

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
7 10	55	25 13·54	57	501·0	58	746·8
7 11	0	13·41	2	502·0	3	746·8
	5	12·78	7	502·7	8	741·2
	10	12·85	12	503·9	13	742·6
	20	12·85	22	505·1	23	742·4
	25	12·96	27	506·0		
	30	12·49	32	509·4	33	732·2
	35	11·64	37	507·5	38	732·3
	40	10·78	42	507·6	43	739·1
	50	09·44	52	505·1	53	742·6
7 12	0	08·08	2	506·8	3	745·0
	10	10·09	12	503·9	13	748·1
	20	11·69	22	507·8	23	743·8
	30	13·43	32	509·2	33	741·4
	40	15·05	42	512·8	43	742·6
	50	14·64	52	513·3		
7 13	0	14·57	2	511·0	3	738·9
7 14	0	11·28	2	514·1	3	716·8
	15	13·29	17	511·6	18	720·5
	35	15·54	37	510·7	38	735·8
7 15	0	19·78	2	511·0	3	739·6
8 4	0	25 22·71	2	524·5	3	789·3
	15	24·66	17	517·6	18	794·9
	20	24·82	22	514·6	23	796·5
	25	23·14	27	507·4	28	803·2
	30	23·95	32	507·6	33	810·0
	35	22·80	37	505·9	38	817·5
	40	22·13	42	504·0	43	829·5
	45	20·03	47	501·7	48	841·7
	50	17·58	52	495·2	53	850·5
	55	13·12	57	504·5	58	849·8
8 5	0	13·49	2	512·5	3	846·3
	5	16·15	7	515·4	8	845·0
	10	18·90	12	515·3	13	842·2
	15	21·12	17	512·2	18	839·9
	20	22·28	22	513·1	23	835·1
	25	22·96	27	512·4	28	831·4
	30	22·80	32	514·0	33	826·7
	45	21·66	47	516·9	48	815·1
8 6	0	21·71	2	515·7	3	812·4
	35	22·20	37	512·5	38	813·1
8 7	0	19·46	2	508·8	3	817·8
	10	21·76	12	513·9	13	816·4
8 8	0	20·20	2	517·2	3	795·4
8 9	0	17·49	2	525·7	3	776·2
	10	17·49	12	518·7	13	777·5
	20	14·89	22	526·8	23	770·5
	25	13·39	27	531·5	28	767·3
	30	14·40	32	529·6	33	767·5
	35	15·27	37	523·9	38	767·7
	40	15·20	42	521·6		
	45	15·39	47	523·3	48	765·5
	50	16·62	52	519·9	53	765·2
	55	16·79	57	517·6	58	765·0
8 10	0	17·53	2	515·5	3	764·9
	15	13·16	17	511·4	18	762·4
	20	10·58	22	513·3		
	25	08·73	27	522·3	28	757·7
	30	08·50	32	526·7	33	756·9
	35	09·98	37	527·8		

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
8 10	40	25 12·82	42	522·9	43	756·8
	55	12·88	57	524·3	58	746·9
8 11	0	12·65	2	526·3	3	743·0
	5	13·36	7	526·8	8	741·2
	10	14·37	12	526·2	13	739·2
	25	17·46	27	515·2	28	743·3
	30	17·56	32	513·8		
	35	17·49	37	512·9	38	745·5
8 12	0	18·90	2	517·2	3	743·6
	5	19·10	7	516·8	8	746·6
8 13	0	18·88	2	519·0	3	748·8
8 14	0	26·52	2	528·1	3	723·2
	5	25·73	7	524·7	8	711·0
	10	24·05	12	522·6	13	700·7
	15	22·28	17	523·2	18	689·4
	20	20·18	22	521·9	23	685·0
	25	18·10	27	521·5	28	682·3
	30	17·02	32	517·7	33	680·6
	35	17·09	37	510·6	38	681·8
	40	16·32	42	513·6	43	687·1
	45	16·75	47	518·4	48	690·6
	50	17·55	52	522·4	53	693·9
	55	18·47	57	522·9	58	693·3
8 15	0	18·85	2	521·9	3	694·4
	5	18·37	7	519·2	8	694·0
	10	17·54	12	516·9	13	695·6
	15	16·76	17	515·1	18	697·7
	20	16·16	22	515·0		
	30	16·30	32	514·8	33	706·8
	35	16·77	37	514·7	38	710·0
8 16	0	18·13	2	513·6	3	724·9
	5	18·16				
8 17	0	18·70	2	517·5	3	744·9
	5	18·77	7	517·7	8	744·7
8 18	0	18·16	2	520·2	3	747·9
10 9	0	25 07·13	2	523·7	3	766·8
	5	07·20	7	520·1	8	769·3
	10	07·91	12	514·5	13	772·2
	15	07·37	17	514·7	18	772·4
	20	08·83	22	516·6	23	773·9
	25	10·87	27	514·1	28	775·7
	30	11·66	32	512·9	33	776·2
	35	12·78	37	513·3	38	775·1
	40	13·93	42	509·9	43	776·9
	45	13·99	47	507·3	48	777·4
	50	13·52	52	507·8	53	776·2
	55	13·46	57	509·0	58	775·7
10 10	0	13·46	2	509·2	3	775·5
	30	17·39	32	510·6	33	772·2
	35	17·10	37	508·5	38	772·6
	40	16·21	42	509·8	43	772·0
	50	15·61	52	510·6	53	771·4
10 11	0	16·46	2	511·0	3	772·5
	10	16·16	12	516·1	13	764·5
	20	18·25	22	518·6	23	762·7
	30	20·38	32	521·3	33	739·1
	35	23·70	37	526·7	38	725·6
	40	24·75	42	521·3	43	716·1
	45	24·32	47	518·5	48	704·0
	50	23·49	52	516·7	53	695·3

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′
10 11	55	25 22·37
10 12	0	21·44
	5	19·81
	10	17·60
	15	14·92
	20	12·78
	25	12·80
11 13	0	25 14·68
*	5	14·13
	10	14·03
	15	14·05
	20	14·30
	40	16·32
11 14	0	17·46
	5	17·48
	30	16·18
11 15	0	19·53
11 16	0	17·40
	30	18·67
11 17	0	17·29
	5	17·09
	10	16·79
	15	17·00
	20	17·37
	25	17·49
	30	17·33
11 18	0	17·84
13 8	0	25 17·00
	15	18·16
	45	19·64
13 9	0	19·53
13 11	0	17·42
	15	18·74
13 12	0	18·23
	10	18·70
13 13	0	18·79
15 5	0	25 17·98
	20	18·02
	30	19·28
	40	20·18
15 6	0	20·67
	15	20·40
	25	20·40
15 7	0	19·58
15 10	0	15·54
	5	16·30
	10	17·58
15 11	0	18·70
16 9	0	25 19·01
	10	16·48
	15	14·48
	20	12·78
	25	12·22
	30	12·20
	35	11·84
	40	13·49
	45	15·11

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers*.

Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.
7	515·1	58	690·3
2	511·8	3	685·1
7	508·1	8	679·3
2	509·3	13	680·7
7	512·9	18	681·8
2	515·8	23	685·5
7	516·0	28	689·6
2	516·0	3	741·3
7	514·9	8	740·8
2	514·9	13	743·1
7	513·4	18	744·9
2	513·0	23	746·1
2	508·5	43	751·0
2	513·3	3	747·4
7	514·3	8	747·1
2	516·6	33	750·3
2	514·2	3	749·7
2	515·4	3	745·3
2	518·3	33	745·5
2	519·2	3	746·6
7	518·9	8	746·5
2	518·0		
7	517·8	18	750·4
2	518·3	23	749·8
7	518·9	28	750·2
2	518·9		
2	520·2	3	749·3
2	522·2	3	751·3
7	524·0	18	751·6
2	523·8	3	748·3
2	522·6	3	754·6
7	521·8	18	753·4
2	528·5	3	734·0
2	525·5	13	733·1
2	522·7	3	737·2
2	515·7	3	725·7
22	521·9	23	730·8
32	522·8	33	730·6
42	521·9	43	729·1
2	520·9	3	727·2
7	522·2	18	724·7
27	522·1		
2	523·7	3	723·4
2	516·0	3	742·9
7	516·8	8	743·2
12	516·8	13	744·8
2	516·7	3	738·3
2	522·2	3	730·4
12	517·8	13	732·5
17	519·0		
22	520·0	23	735·3
27	520·0	28	737·2
37	524·4	38	737·9
42	520·8	43	741·1
47	520·4	48	741·5

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
16	9	50	25	15·02	52	520·6	53	740·9
16	10	0		16·35	2	521·3	3	739·2
		30		14·87	32	521·0	33	734·2
		40		15·47	42	516·2	43	738·6
		50		14·84	52	519·5	53	738·1
16	11	0		15·36	2	519·5	3	737·3
16	18	0	25	19·04	2	535·7	3	701·4
		10		17·24	12	534·7	13	701·3
		20		15·24	22	531·7	23	705·7
		25		15·94	27	530·1	28	706·8
		30		16·13	32	527·0	33	705·9
		35		16·08	37	526·7	38	711·4
16	19	0		17·53	2	523·8	3	713·9
17	10	0	25	12·13	2	542·0	3	713·8
		5		11·81	7	541·8	8	711·0
		10		12·04	12	538·9	13	712·9
		15		11·81	17	533·4	18	714·5
		20		11·41	22	528·9	23	715·8
		25		11·88	27	524·6	28	717·6
		30		11·59	32	520·1	33	720·3
		35		12·08	37	518·6	38	721·3
		40		12·87	42	517·0	43	723·9
		45		14·41	47	516·9	48	724·6
17	11	0		18·72	2	523·6	3	723·5
		5		18·88	7	523·6	8	720·7
		10		18·84	12	527·8	13	716·0
		15		18·85	17	530·7	18	710·7
		20		18·70	22	530·9	23	706·7
		25		18·43	27	529·7	28	704·2
		30		18·13	32	528·7	33	703·0
		35		17·29	37	527·2	38	701·7
		40		16·79	42	525·4	43	701·2
		45		15·92	47	524·6	48	700·1
		50		15·47	52	522·4	53	700·8
		55		15·44	57	520·3	58	703·3
17	12	0		15·66	2	519·3	3	706·7
		5		16·54	7	518·8	8	707·2
		10		16·25	12	518·5	13	708·0
		15		16·08	17	518·9	18	707·5
		20		16·08	22	520·5	23	707·0
		25		17·09	27	521·6	28	705·1
		30		18·85	32	521·4	33	704·0
		35		19·49				
21	13	0	25	14·84	2	532·7	3	709·4
		10		14·87	12	530·0	13	708·7
		20		14·67	22	525·8	23	711·0
		30		14·10	32	521·6	33	713·7
		40		13·99	42	517·7	43	717·5
		50		14·10	52	517·2	53	720·5
21	14	0		14·78	2	517·9	3	723·4
		30		15·22	32	517·8	33	725·6
		40		16·72	42	519·4	43	725·9
21	15	0		16·16	2	517·5	3	727·1
		20		16·12	22	517·2	23	730·1
21	16	0		16·75	2	518·3	3	731·4
22	7	0	25	20·74	2	525·1	3	746·2
		15		18·23	17	522·5	18	746·1

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
22	7	20	25	15·14	22	526·6		
		25		14·84	27	528·2	28	747·8
		30		13·46	32	533·7	33	746·9
		35		15·04	37	535·4	38	745·9
		40		17·02	42	532·3		
		45		19·71	47	526 3	48	746·4
		50		20·42	52	519·5		
		55		20·79	57	512·9	58	750·9
22	8	0		18·72	2	515·2	3	752·4
		5		17·54	7	521·0	8	752·5
		10		18·61	12	523·0	13	754·8
		15		20·06	17	518·2	18	757·8
		20		20·33	22	514·3	23	759·8
		25		20·18	27	512·0	28	763·7
	*	30		20·43	32	508·1	33	766·8
		35		20·18	37	503·3	38	770·2
		40		17·68	42	505·2	43	772·0
		45		16·13	47	510·0	48	771·9
		50		15·69	52	512·1	53	772·6
		55		16·52	57	513·2	58	773·5
22	9	0		16·68	2	515·9	3	771·8
		10		17·22	12	518·7	13	769·2
		25		16·82	27	519·5	28	765·2
22	10	0		17·56	2	521·4	3	758·6
22	11	0		18·16	2	522·5	3	749·5
		10		18·86	12	522·0	13	755·8
22	12	0		17·60	2	523·5	3	739·6
26	4	0	25	19·91	2	523·5	3	745·7
		20		18·90	22	520·7	23	752·1
26	5	0		18·23	2	525·6	3	751·8
28	5	0	25	17·98	2	535·3	3	751·2
		5		18·45	7	533·6	8	749·5
		10		18·72	12	533·1	13	748·7
28	6	0		18·75	2	533·1	3	746·3
28	7	0		20·30	2	518·5	3	764·9
		5		14·46	7	512·7	8	766·7
		10		09·26	12	514·9	13	776·0
		15		06·70	17	515·7	18	783·6
		20		04·71	22	510·7	23	794·3
		25		03·40	27	515·7	28	804·8
		30		03·06	32	513·1	33	813·7
		35		04·91	37	504·4	38	813·0
		40		03·34	42	505·0	43	810·7
		45		03·92	47	507·7	48	807·0
		50		04·28	52	506·3	53	805·3
		55		05·90	57	502·6	58	809·2
28	8	0		06·51	2	500·7	3	813·6
		5		07·44	7	504·4	8	816·5
		10		09·42	12	505·0	13	819·1
		15		11·10	17	505·8	18	817·1
		20		12·08	22	511·4	23	816·4
		25		13·25	27	510·2	28	813·7
		30		13·39	32	509·6	33	810·3
		35		14·60	37	507·2	38	809·1
		40		15·14	42	501·7	43	811·0
		45		13·44	47	500·2	48	810·0
		50		11·98	52	502·6	53	805·1
		55		12·45	57	504·5	58	800·2
28	9	0		13·32	2	505·3	3	800·0

BIFILAR. k=0·000140. BALANCE. k=0·0000085.

Feb. 22d 12h. The declination magnet moving slightly.
Feb. 28d 7h 30m. Clock 16s slow; set right.
* See notes on Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
28 9	15	25 13·46	17	504·2	18	802·2
	20	13·32	22	506·3	23	803·8
	25	14·53	27	507·8	28	805·6
	35	15·47	37	520·9	38	804·5
	40	14·67	42	521·7	43	796·7
	45	13·83	47	521·6	48	789·8
	50	11·84	52	518·8	53	784·3
	55	09·98	57	513·5	58	776·8
28 10	0	08·70	2	507·1	3	765·4
	5	06·51	7	501·2	8	753·9
	10	06·16	12	496·3	13	743·0
	15	05·65	17	495·8	18	735·2
	20	05·30	22	488·6	23	735·2
	25	04·95	27	485·4	28	741·5
	30	03·21	32	487·4	33	748·7
	35	01·14	37	496·4	38	749·5
	40	00·85	42	490·8	43	749·0
	45	02·13	47	487·5	48	749·0
	50	02·53	52	490·1	53	747·4
	55	02·72	57	491·1	58	742·8
28 11	0	03·99	2	491·2	3	741·3
	5	05·83	7	490·3	8	746·3
	10	06·56	12	494·3	13	751·5
	15	07·85	17	497·7	18	756·8
	20	09·46	22	500·7	23	758·3
	25	10·61	27	505·8		
	30	11·89	32	507·2	33	758·5
	35	12·78	37	511·6	38	755·9
	40	12·80	42	516·5	43	751·3
	45	13·54	47	516·6	48	750·5
	50	13·94	52	517·1	53	745·3
	55	12·78	57	517·4	58	742·5
28 12	0	13·16	2	514·0	3	743·7
	5	13·17	7	514·2	8	744·0
	10	13·20	12	516·3		
	15	12·93	17	515·6	18	745·5
	20	12·72	22	512·2	23	750·4
	25	12·20	27	513·4		
	30	12·62	32	515·0	33	753·3
	35	13·69	37	516·4	38	755·6
	40	14·60	42	516·5		
	45	14·70	47	518·1	48	758·5
	50	15·47	52	519·5		
	55	16·55	57	519·2	58	759·6
28 13	0	16·86	2	518·6	3	761·6
	5	18·10	7	519·3		
	10	18·57	12	517·5	13	762·6
	45	17·58	47	517·5	48	762·2
28 14	0	14·94	2	512·6	3	759·1
	5	13·47	7	510·1	8	759·0
	10	12·69	12	509·9		
	15	12·78	17	510·1	18	761·3
	20	13·44	22	512·4		
	25	13·59	27	509·0	28	763·1
	30	14·46	32	509·7	33	765·6
	35	15·56	37	511·1		
	40	15·74	42	510·5	43	764·5
	45	15·38	47	509·4	48	761·2
	50	14·70	52	507·5	53	759·7
	55	14·53	57	506·2	58	757·7
28 15	0	15·81	2	504·9	3	756·7

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
28 15	5	25 17·46	7	505·6		
	10	19·98	12	506·3	13	751·7
	15	22·72	17	507·2	18	746·1
	20	23·56	22	508·1	23	736·0
	25	22·91	27	508·9	28	724·9
	30	21·48	32	509·6	33	715·1
	35	21·51	37	511·4	38	703·9
	40	22·01	42	512·3	43	691·0
	45	24·26	47	516·6	48	678·7
	50	25·56	52	521·9	53	664·0
	55	22·96	57	516·2	58	640·1
28 16	0	20·08	2	520·4	3	617·4
	5	15·81	7	515·2	8	596·2
	10	11·27	12	507·4	13	575·3
	15	06·98	17	488·0	18	553·1
	20	25 02·66	22	483·0	23	545·1
	25	24 59·51	27	481·3	28	547·9
	30	24 57·35	32	481·8	33	562·4
	35	24 56·40	37	486·3	38	578·0
	40	24 57·59	42	495·0	43	598·3
	45	24 59·24	47	497·4	48	613·7
	50	25 01·36	52	499·1	53	628·6
	55	02·37	57	503·7	58	635·5
28 17	0	03·21	2	505·1	3	641·6
	5	03·37	7	511·3	8	642·8
	10	02·53	12	514·6	13	642·9
	15	01·25	17	518·8	18	644·6
	20	01·34	22	521·4	23	648·1
	25	02·79	27	523·0	28	651·6
	30	04·53	32	520·4	33	656·9
	35	06·74	37	518·5	38	660·3
	40	08·19	42	519·3	43	662·0
	45	09·35	47	518·9	48	665·2
	50	09·47	52	525·8		
28 18	0	12·65	2	527·6	3	664·5
	10	13·54	12	527·8	13	663·3
	35	14·80	37	520·7	38	678·4
28 19	0	17·31	2	513·9	3	695·5
	10	17·80	12	514·9	13	698·7
	15	16·05	17	519·2	18	698·8
	20	16·01	22	522·1	23	698·6
	25	16·08	27	523·0	28	700·6
	35	16·21	37	520·4	38	705·7
28 20	0	15·81	2	518·9	3	717·7
	30	14·98	32	520·0	33	724·9
28 21	0	15·64	2	521·2	3	724·2
	5	16·75	7	522·7	8	724·1
	10	16·99	12	521·1	13	722·8
28 22	0	17·00	2	513·5	3	735·1
28 23	0	20·52	2	509·6	3	739·7
	10	21·06	12	513·0	13	738·6
29 0	0	22·27	2	510·6	3	752·3
29 7	0	25 17·83	2	511·3	3	778·9
	20	14·80	22	513·0	23	784·6
29 8	0	18·16	2	519·5	3	777·4
29 10	0	13·23	2	535·2	3	753·7
	5	12·87	7	544·3	8	747·0
	10	14·80	12	541·5	13	746·9
	15	17·58	17	530·3	18	749·6
	20	17·73	22	526·9	23	748·1

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′
29 10	25	25 15·01
	30	13·32
	35	13·43
	40	15·44
	45	14·87
	50	13·99
29 11	0	15·49
	5	14·83
	10	13·61
	15	12·33
	20	12·65
	40	16·13
	45	16·65
	50	16·78
	55	16·42
29 12	0	16·15
	5	16·38
	10	16·01
29 13	0	16·55
29 15	0	15·01
	5	15·51
	10	16·32
	15	16·08
29 16	0	15·54
1 10	0	25 16·06
	5	15·71
	10	15·74
	15	14·59
	20	13·10
	25	11·82
	30	10·95
	35	10·94
	40	12·03
	45	12·83
	50	14·11
	55	15·36
1 11	0	16·08
	15	16·80
	25	15·45
	35	15·27
1 12	0	14·96
1 19	0	25 16·05
	10	16·75
	15	16·64
	20	16·60
	25	16·21
	30	16·33
1 20	0	15·31
	5	15·52
	10	15·45
1 21	0	16·80
2 2	0	25 26·27
	10	29·66
	35	24·52
	40	24·19
	45	24·59
	50	24·03

BIFILAR. k=0·000140. BALANCE. k=0·0000085.

Feb. 29d. The magnets appear to have been unsteady during the whole of this day.
March 1d. Magnets slightly disturbed throughout the day.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
7	533·9	28	743·4	2 3	0	25 24·22	2	519·4	3	750·5	2 10			53	518·6	53	562·0
2	539·1	33	738·7											54	513·3		
7	541·5	38	735·4	2 8	0	25 19·79	2	524·8	3	761·2		55	25 17·02	55	504·5		
2	533·9	43	737·7		5	17·26	7	519·7	8	764·5				56	509·1	56	526·9
7	530·4	48	736·9		10	16·05	12	520·1	13	770·2		57	21·27	57	517·5		
2	529·0				15	16·35	17	518·8	18	774·5				58	522·5	58	506·7
2	516·3	3	740·5		20	11·69	22	514·9	23	776·3		59	21·63	59	513·7		
7	512·1	8	746·4		25	08·68	27	516·6	28	778·6	2 11	0⅓	21·12	0	505·8		
2	510·0	13	748·7		30	06·03	32	523·7	33	778·5				1	499·6	1	454·4
7	512·5	18	750·4		35	04·88	37	528·4	38	770·7		2	16·92	2	497·0		
					40	01·18	42	532·0	43	768·7				3	498·3	3	497·0
2	516·9	43	755·3		45	00·62	47	526·1	48	771·0		4	16·66	4	496·9		
7	516·2	48	755·7		50	01·95	52	524·4	53	773·5		5	17·15	6	491·4	6	495·7
2	515·7	53	755·2		55	04·75	57	519·8	58	773·7		7	14·92	7	489·2	8	499·1
7	515·0	58	754·8	2 9	0	07·94	2	515·0	3	774·3		9	14·33	9	488·9		
2	517·8	3	753·5		5	12·76	7	506·6	8	779·9				10	486·4	10	484·8
7	516·9	8	754·4		10	15·17	12	507·7	13	779·2		11	16·12	12	485·1	12	478·4
					15	23·31	17	519·6	18	759·9				13	482·6	13	480·5
2	516·8	3	756·2		16	26·84	19	517·3				14	17·39	14	481·0		
2	515·0	3	753·8		20	31·61	22	515·7	23	720·1		15	15·81	15	480·9		
7	514·2	8	755·4		21	32·51	24	518·2						16	485·7	16	504·3
2	513·4	13	755·5	*	25	26·23	27	536·1	28	666·7		17	13·90	17	483·7		
7	513·0	18	755·3		26	27·39	29	531·4						18	480·2	18	507·6
2	515·5	3	752·2		30	34·05	32	521·0	33	624·5		19	13·69	19	478·1		
					31	35·31	34	514·8				20	12·04	20	482·0	21	523·8
2	519·7	3	769·3		35	37·01	37	496·0	38	605·1		22	08·92	22	495·6		
7	518·7	8	770·6		36	36·20	39	498·6						23	501·6	23	537·1
12	516·5	13	772·5		40	27·82	42	507·6	43	608·1		24	09·71	24	504·6		
17	517·1	18	773·0		41	25·87	44	502·6				25	09·84	25	504·4		
22	517·5	23	772·4		45	26·25	47	490·7	48	620·8				26	505·6	26	554·0
27	519·6	28	772·3				49	489·4				27	10·51	27	503·8		
32	520·9	33	772·0		50	15·25	52	492·6	53	601·4				28	500·8	28	565·0
37	522·8	38	771·9		51	13·05	54	498·8				29	09·84	29	498·6		
42	522·7	43	771·8		55	08·18	57	510·1	58	596·3		30	09·39	30	498·2		
47	521·7	48	771·9	2 10	0	06·03	2	509·6	3	584·4				31	499·6	31	585·5
52	520·2	53	772·4				4	510·6				32	08·55	32	500·5	33	596·0
57	523·3	58	769·2		5	09·10	7	509·7	8	580·9		34	08·63				
2	523·9	3	768·8				9	501·0				35	08·79	37	512·1	38	606·9
17	520·3	18	766·7		10	12·25	12	485·9	13	567·0		40	10·07	42	512·3	43	619·1
27	521·4						14	481·6				45	10·78	47	511·4	48	628·1
37	521·5	38	765·5		15	13·09	16	474·3				50	11·49	52	506·7	53	635·4
2	521·2	3	763·5				17	474·7	18	556·2		55	09·66	57	507·7	58	629·0
							19	470·6			2 12	0	08·85				
2	521·5	3	754·0		20	12·31	21	479·8				2	07·52	2	543·4	3	581·8
12	521·5	13	755·1				22	478·5	23	559·2		4	08·73	4	564·6		
17	520·8						24	480·7				5	10·31	5	567·5		
22	521·2	23	754·3		25	12·18	27	479·5	28	559·3				6	567·9	6	552·8
27	522·3						29	473·3				7	09·71	7	565·5		
					30	12·75	31	461·1						8	562·6	8	535·6
2	525·2	3	749·6				32	458·4	33	574·2		9	14·89	9	557·3		
7	523·7						34	455·1				10	15·42	10	552·5		
					35	08·46	36	461·7						11	549·2	11	523·6
2	512·2	3	750·1				37	463·8	38	605·5		12	16·39	12	546·0		
							39	467·9						13	541·8	13	520·9
2	531·8	3	744·7		40	03·54	42	468·7	43	622·3		14	17·67	14	536·0		
10	543·5				41	03·30	44	478·1				15	18·47	15	529·0		
32	504·2	33	761·4		45	02·79	46	479·5						16	520·2	16	519·8
37	506·3	38	760·3		46	03·00	47	477·3	48	599·3		17	18·99	17	513·1		
42	509·0				48	04·08	49	507·2	50	584·8				18	509·4	18	520·8
47	510·6	48	757·9		51	08·97	51	513·7				19	17·39	19	505·9		
52	512·7	53	755·9		52	16·05	52	512·1				20	16·32	20	502·7		

BIFILAR. k=0·000140. BALANCE. k=0·0000085.

March 2d 8h 20m. Clock 30s slow; set right.
March 2d 9h 16m. The vibration of the declination magnet suddenly checked.
March 2d 10h. Clock 3s fast.
March 2d 10h 44m—59m. The bifilar magnet vibrating 20 to 30 divisions.
March 2d 11h 0m. The observation of the declination was taken 18s after the 0m.
March 2d 12h 0m. The declination magnet commenced to vibrate about 13′. 12h 0m—10m. The bifilar magnet vibrating about 15 divisions.
* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers*.

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
2 12			21	199·7	21	525·6
	22	25 13·69	22	500·5		
			23	502·9	23	532·8
	24	11·82	24	504·7		
	25	11·74	25	503·7		
			26	507·5	26	541·6
	27	11·77	27	514·6		
			28	518·2	28	546·8
	29	11·27	29	519·2		
	30	11·05	30	520·6		
			31	521·5	31	552·6
	32	10·87	32	523·4		
			33	525·3	33	553·9
	34	10·40				
	35	10·51			36	557·0
	37	10·23	37	535·3		
			38	537·7	38	558·2
	39	10·63	39	538·8		
	40	10·88	40	540·9		
			41	543·1	41	557·2
	42	12·18	42	544·7		
			43	545·5	43	556·7
	44	13·63	44	546·0		
	45	14·53			46	557·0
	47	15·96	47	545·0	48	558·1
	49	17·15				
	50	17·61	52	534·2	53	554·2
	55	18·30	57	527·7	58	556·2
3 12			52	527·2	53	632·5
	55	25 24·19	57	521·2	58	623·5
3 13	0	24·15	2	515·1	3	616·0
	5	22·27	7	512·6	8	608·3
	10	19·64	12	512·5	13	599·1
	15	18·14	17	511·3	18	589·6
	20	17·54	22	508·5	23	582·9
	25	17·86	27	502·1	28	580·0
	30	17·78	32	493·9	33	579·8
	35	15·56	37	488·3	38	583·8
	40	11·61	42	493·5	43	583·2
	45	08·65	47	503·2	48	584·4
	50	09·00	52	511·9	53	591·8
	55	11·30	57	514·0	58	600·3
3 14	0	12·11	2	512·5	3	606·7
	5	12·11	7	510·5	8	612·3
	10	11·99	12	509·6	13	616·9
	15	11·39	17	510·9	18	621·9
	20	11·44	22	512·0	23	626·2
	25	12·16	27	512·1	28	630·8
	30	12·45	32	510·9	33	636·8
	35	12·73	37	508·8	38	642·3
	40	12·72	42	509·0	43	647·4
	45	12·75	47	508·9	48	651·6
	50	12·04	52	509·6	53	655·0
	55	11·40	57	511·0	58	658·8
3 15	0	10·77	2	512·9	3	662·9
	5	11·34	7	511·3	8	666·5
	10	12·01	12	509·8	13	669·2
	15	11·98	17	510·4	18	672·3
3 16	0	13·39	2	512·6	3	688·8
	20	16·15	22	513·8	23	695·6

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
3 16	25	25 16·72	27	514·3	28	695·1
	30	16·33	32	513·1	33	693·8
	35	15·45	37	513·7	38	695·1
	40	15·30	42	515·8	43	695·3
	45	15·12	47	516·6		
3 17	0	15·41	2	517·0	3	697·8
	5	15·09	7	517·0	8	699·8
	10	14·80	12	517·3	13	700·9
	15	15·11				
3 18	0	14·43	2	520·1	3	704·6
	5	15·01	7	518·4	8	708·3
	10	15·83	12	516·6	13	711·0
	15	16·13	17	515·0	18	711·6
	20	15·79	22	516·1	23	711·1
3 19	0	16·55	2	517·6	3	713·5
3 20	0	17·01	2	509·8	3	718·9
	10	18·90	12	506·0	13	723·2
	15	19·78	17	504·7	18	730·0
	20	20·09	22	501·1	23	728·8
3 21	0	22·62	2	511·9	3	727·9
	10	20·53	12	515·9	13	726·5
	35	17·46	37	514·6	38	733·6
3 22	0	18·13	2	518·1	3	733·8
4 0	0	23·79	2	520·1	3	727·0
	45	23·14	47	512·9	48	730·0
	50	23·11	52	516·4	53	729·4
4 1	0	22·98	2	515·8	3	732·3
4 3	0	20·43	2	513·1	3	781·5
	5	20·42	7	515·2	8	781·7
	15	20·67	17	521·7	18	788·4
	20	19·71	22	521·8		
	50	20·56	52	533·4	53	781·0
	55	19·76	57	530·7		
4 4	0	20·40	2	522·6	3	785·7
	15	20·83	17	492·1	18	802·0
	20	17·71	22	489·9	23	802·9
	25	13·27	27	503·4	28	800·0
	30	11·44	32	518·6	33	797·3
	35	11·44	37	523·8	38	798·7
	40	12·36	42	528·2		
	45	13·63	47	532·8	48	798·3
	50	14·92	52	532·2	53	798·3
	55	16·45	57	532·0	58	795·8
4 5	0	17·53	2	530·7	3	794·3
	15	19·01	17	527·9	18	786·0
	40	18·68	42	525·6	43	771·5
	50	18·63	52	526·7		
	55	19·15				
4 6	0	17·96	2	525·2	3	775·0
	15	18·78	17	521·9	18	779·5
	25	19·17	27	515·4	28	779·9
	30	19·14	32	521·6	33	778·0
	35	19·14	37	519·9	38	773·9
	40	19·28	42	521·1	43	771·2
	45	18·67	47	523·5	48	769·6
	50	17·31	52	525·7	53	769·7
	55	14·30	57	510·1	58	776·7
4 7	0	25 06·48	2	503·4	3	782·3
	5	24 59·98	6	507·5		
			7	508·7	8	784·0
	9	56·82				

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′
4 7	10	24 56·13
	11	56·20
	14	51·46
	15	49·75
	16	50·38
	19	51·50
	20	52·20
	21	52·67
	24	54·26
	26	53·45
	30	52·37
	34	51·66
	35	51·56
	40	54·15
	45	54·90
	50	54·35
	55	56·28
4 8	0	59·51
	5	59·16
	10	59·46
	15	59·66
	20	24 59·68
	25	25 00·61
	30	03·32
	35	06·03
	40	07·27
	45	09·22
	50	11·03
	55	12·60
4 9	0	12·08
	5	12·96
	10	12·93
	15	13·22
4 10	0	25·60
	5	27·26
	10	22·82
	14	17·06
	15	14·65
	19	08·75
	20	08·70
	21	10·36
	25	10·54
	30	15·61
	34	19·51
	35	19·95
	39	22·53
	40	23·02
	44	24·33

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

March 4d 3h 52m. The bifilar attained its highest reading at this time.
March 4d 6h 57m. Bifilar magnet vibrating 10 divisions.
March 4d 10h 12m. Bifilar magnet vibrating 10 divisions.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
				4 10	45	25 24·48	46	523·6			4 20	15	25 19·46	17	496·5	18	731·7
12	508·9	13	788·9				47	522·8	48	613·4				19	494·2		
					49	24·60						20	20·67	22	490·3	23	734·8
					50	24·69	51	514·3						24	489·1		
17	530·4	18	780·4				52	512·8	53	618·7		25	21·53	27	487·8	28	736·9
					54	22·92						30	22·78	32	486·7	33	738·1
					55	22·69	56	508·4				35	24·28	37	489·1	38	737·1
22	531·9	23	781·3				57	506·9	58	623·3		40	23·79	42	497·8	43	732·0
25	536·7				59	20·79						45	24·22	47	494·1	48	733·0
27	528·6	28	779·3	4 11	0	19·82	1	506·0				50	22·71	52	496·8	53	731·3
29	528·2						2	507·0	3	629·3		55	19·98	57	506·1	58	728·3
32	521·5	33	777·8		4	16·38					4 21	0	21·16	2	512·0	3	729·7
					5	15·52	6	509·2				5	23·48	7	514·3	8	732·5
36	525·3						7	511·2	8	637·0		10	23·48	12	513·0		
37	526·9	38	774·2		9	12·73						15	23·43	17	514·2	18	731·8
42	529·2	43	773·5		10	12·72	12	517·9	13	645·1		20	23·78	22	520·5	23	726·3
47	528·4	48	770·0		15	12·60	17	519·2	18	655·3		25	22·96	27	514·5	28	727·1
52	531·1	53	764·8		20	12·92	22	517·9	23	663·5		30	25·34	32	502·4	33	729·6
57	535·1	58	760·5		25	13·25	27	516·7	28	671·2		35	23·98	37	509·9	38	727·8
2	533·8	3	757·5		40	15·27	42	516·4	43	693·3		40	22·77	42	511·0	43	728·6
7	532·1	8	751·8		45	15·78	47	515·7	48	699·0		45	21·71	47	511·9	48	726·7
12	527·0	13	751·6		55	16·41	57	516·5	58	707·7		50	20·29	52	515·8		
17	518·5	18	754·5	4 12	0	16·12	2	517·3	3	711·7		55	19·81	57	507·3	58	730·9
22	514·7	23	755·9	4 14	0	22·13	2	512·3	3	677·1	4 22	0	19·98	2	512·8	3	732·2
27	515·8	28	757·0		5	21·57	7	513·9	8	676·7		5	19·61	7	509·1	8	735·1
32	513·2	33	758·8		10	22·65	12	516·1	13	675·5		10	18·65	12	512·2	13	734·9
37	512·7	38	760·2		15	23·46	17	519·8	18	675·0		15	20·27	17	514·6	18	735·9
42	517·5	43	754·9		20	25·13	22	521·3	23	673·3		20	21·53	22	511·8	23	739·0
47	517·5	48	754·0		25	26·13	27	520·3	28	669·0		25	22·01	27	500·3	28	740·8
52	513·8	53	753·3		30	26·41	32	518·6	33	661·2				29	502·7		
57	514·0	58	751·0		35	25·38	37	515·2	38	655·0		30	19·84	32	505·0	33	737·9
2	515·5	3	748·7		40	22·77	42	514·5	43	647·6				34	505·1		
7	516·2	8	747·6		45	20·30	47	516·7	48	641·1		35	18·97	37	508·6	38	739·0
12	516·8	13	744·7		50	18·20	52	517·9	53	634·9				39	502·1		
17	516·8	18	754·5		55	17·37	57	515·9	58	634·5		40	18·97	41	504·1		
2	523·8	3	655·8	4 15	0	17·33	2	511·9	3	634·7				42	506·6	43	738·3
6	506·7				10	14·80	12	511·4	13	639·2				44	504·9		
7	503·3	8	622·3		15	14·64	17	507·1	18	644·9		45	20·23	47	503·6	48	738·7
9	495·1				20	14·89	22	505·9	23	650·1		50	20·65	52	503·2	53	742·0
11	500·6				30	13·99	32	505·7	33	658·7		55	18·77	57	508·5	58	738·8
12	503·8	13	600·8		35	14·50	37	507·6	38	667·9	4 23	0	19·64	2	517·1	3	742·2
					40	16·80	42	509·4	43	673·1		5	22·48	7	499·4	8	748·3
15	500·9				45	18·23	47	506·9	48	680·6		10	20·90	12	497·6	13	746·0
16	505·4				50	19·71	52	505·6	53	683·1		15	17·07	17	506·4	18	747·5
17	509·1	18	585·3		55	20·87	57	504·0	58	686·0		20	18·60	22	511·2	23	748·0
				4 16	0	21·10	2	505·2	3	688·1		25	19·12	27	509·3	28	751·2
21	524·3				5	21·76	7	504·8	8	688·2		30	19·86	32	507·6	33	754·4
22	526·9	23	676·6		10	21·64	12	505·6	13	688·8		35	22·00	37	504·3	38	755·2
					25	21·71	27	511·3	28	681·4		40	21·73	42	501·4	43	758·6
26	534·7				30	21·24	32	510·1	33	678·8		45	21·61	47	507·7	48	759·3
27	535·5	28	584·7		50	18·87	52	513·2	53	682·8		50	25·51	52	503·3	53	767·1
29	541·7			4 17	0	18·94	2	515·0	3	686·9		55	22·00	57	497·8	58	767·2
31	545·2			4 19	0	16·32	2	518·0	3	715·9	5 0	0	21·59	2	500·2	3	763·9
32	543·8	33	595·5		5	15·47	7	516·3	8	716·0		5	21·36	7	504·7	8	763·5
					15	15·01	17	516·3	18	715·0		10	22·69	12	511·6	13	763·3
36	539·3				20	15·22	22	517·9				15	22·30	17	508·9	18	764·8
37	537·8	38	603·1	4 20	0	18·65	2	509·5	3	722·2		20	23·51	22	504·8	23	765·4
					5	18·10	7	501·8	8	728·2		25	22·84	27	503·7	28	764·4
41	532·3						9	499·9				30	22·89	32	503·8	33	763·4
42	530·5	43	608·0		10	18·72	12	499·4	13	729·0		35	22·74	37	502·8	38	763·7
							14	498·0						52	503·0	53	762·1

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

March 4ᵈ 21ʰ 30ᵐ. The declination magnet vibrating about 3′.
March 4ᵈ 23ʰ 52ᵐ. The bifilar magnet vibrating 12 divisions.

Gött. Mean Time. d. h.	Declination. Min.	° ′	Bifilar Corrected. Min.	Sc. Div.	Balance Corrected. Min.	Mic. Div.
5 0	55	25 22·04	57	509·5	58	762·4
5 1	0	22·40	2	510·8	3	762·6
	5	22·64	7	512·6	8	763·6
	10	22·62	12	513·6	13	763·7
	15	22·27	17	514·5	18	764·2
	35	22·77	37	519·9	38	764·6
	40	24·19	42	531·0	43	765·3
	45	26·72	47	534·3	48	769·2
	50	26·94	52	529·7	53	773·0
	55	27·32	57	526·8	58	776·1
5 2	0	24·17	2	524·8	3	778·0
	5	27·12	7	525·3	8	780·0
	10	27·19	12	526·2	13	783·2
	15	28·65	17	528·2	18	785·0
	20	28·62	22	518·6	23	789·3
	25	28·04	27	510·1	28	794·7
	30	24·94	32	505·2	33	800·4
	35	22·11	37	503·4	38	810·1
	39	19·53				
	40	19·48	41	513·9		
			42	514·6	43	812·9
	45	18·48	47	523·5	48	812·8
	50	19·21	52	526·0	53	814·8
	55	18·81	57	523·6	58	819·5
5 3	0	17·22	2	521·0	3	823·0
	5	16·38	7	517·2	8	825·4
	10	15·69	12	521·7	13	823·6
	15	15·89	17	527·0	18	822·3
	20	16·60	22	529·4	23	820·7
	25	17·44	27	529·6	28	818·7
	30	18·57	32	529·3	33	816·6
	35	18·77	37	528·2	38	812·9
	40	18·85	42	528·0	43	810·3
	45	19·37	47	526·8	48	806·6
	50	19·44	52	527·2	53	801·8
	55	19·53	57	526·5	58	808·2
5 4	0	19·58	2	527·1	3	796·6
	40	19·46	42	521·8	43	784·7
	45	19·41	47	523·6	48	783·4
	50	19·17	52	522·6	53	781·7
5 5	0	19·22	2	524·1	3	777·7
	50	16·79	52	520·1	53	784·5
			54	516·7		
	55	15·62	57	512·3	58	784·8
5 6	0	15·31	2	509·5	3	785·9
	5	13·67	7	511·5	8	784·4
	10	12·09	12	520·4	13	782·3
	15	13·14	17	523·4	18	782·8
	20	14·08	22	523·4	23	782·2
	25	14·80	27	521·0	28	781·0
	30	15·38	32	521·6	33	780·1
	40	14·06	42	519·5		
	50	12·78	52	517·1		
	55	09·22	57	518·0	58	778·5
5 7	0	04·34	2	519·9	3	775·7
	5	01·48	7	529·1	8	778·3
	10	03·45	12	524·7	13	780·6
	15	03·67	17	525·2	18	781·7
	20	05·53	22	521·9	23	784·0
	25	05·79	27	511·2	28	787·2
	30	05·25	32	505·4	33	786·6

Gött. Mean Time. d. h.	Declination. Min.	° ′	Bifilar Corrected. Min.	Sc. Div.	Balance Corrected. Min.	Mic. Div.
5 7	35	24 58·56				
	36	24 57·58	37	512·6	38	783·7
	39	24 55·63				
	40	24 55·15	42	527·6	43	777·9
	41	24 54·89	44	534·5		
	45	24 56·58	46	537·4		
			47	538·4	48	774·0
	50	25 00·24	52	540·7	53	770·8
	55	03·47	57	537·8	58	767·9
5 8	0	05·69	2	527·9	3	767·9
	5	05·89	7	526·4	8	766·1
	10	07·35	12	526·8	13	763·0
	15	08·29	17	523·7	18	761·2
	20	10·04	22	522·7	23	760·0
	25	13·19	27	516·5	28	762·2
	30	11·89	32	510·3	33	756·1
	35	07·67	37	520·4	38	752·1
	40	05·63	42	525·2	43	748·7
	45	02·32	47	543·1	48	739·4
			49	547·9		
	50	06·50	52	546·1	53	738·0
	55	11·68	57	536·0	58	738·7
5 9	0	14·84	2	525·2	3	738·9
	5	15·47	7	515·1	8	739·0
	10	13·67	12	512·7	13	740·1
	15	12·20	17	512·3	18	738·9
	20	10·72	22	519·2	23	736·9
	25	11·00	27	525·0	28	733·4
	31	12·06	32	527·4	33	729·2
	35	13·22	37	525·2	38	727·2
	40	14·80	42	517·6	43	727·3
	45	12·95	47	515·4	48	726·8
	50	11·42	52	514·7	53	725·0
	55	10·68	57	513·4	58	721·9
5 10	0	09·98	2	512·1	3	717·2
	5	09·53	7	510·9	8	701·9
	20	12·38	22	528·4	23	653·1
	25	14·60	27	512·3	28	638·8
	30	14·87	32	507·1	33	632·3
	35	14·92	37	499·4	38	629·0
	40	16·21	42	498·6	43	641·9
			44	493·7		
	45	24·72				
	46	25·70	47	469·6	48	615·4
			49	458·1		
	50	26·90	51	448·1		
	54	25·14	52	448·8	53	575·1
	55	22·45	55	456·7		
			56	462·4	56	574·9
	57	18·84	57	467·3		
			58	472·7	58	576·1
	59	16·57	59	475·0		
5 11	0	16·36	0	474·4		
			1	474·6	1	568·6
	2	16·72	2	474·7		
			3	477·1	3	563·3
	4	15·99	4	479·2		
	5	15·54	5	480·2		
			6	482·8	6	570·0
	7	14·91	7	484·6		
			8	485·0	8	575·0

Gött. Mean Time. d. h.	Declination. Min.	° ′
5 11	9	25 13·19
	10	11·99
	15	06·81
	20	11·28
	24	14·43
	25	14·77
	30	13·09
	32	12·23
	35	11·68
	40	10·78
	45	09·57
	50	08·93
	55	07·25
5 12	0	07·65
	5	06·76
	10	06·34
	15	07·35
	20	07·04
	25	08·34
	30	09·79
	35	13·54
	40	17·96
	44	20·60
	45	21·46
	50	22·11
	54	19·82
	55	19·05
5 13	0	16·28
	5	13·44
	10	11·12
	15	10·03
	20	10·27
	25	09·67
	30	09·3[illegible]
	35	07·0[illegible]
	40	05·0[illegible]
	45	03·7[illegible]
	50	03·2[illegible]
	55	02·6[illegible]
5 14	0	03·0[illegible]
	5	03·8[illegible]
	10	04·1[illegible]
	15	04·0[illegible]
	20	04·2[illegible]
	25	04·8[illegible]
	30	05·9[illegible]
	35	07·5[illegible]
	40	08·9[illegible]
	45	09·5[illegible]
	50	11·0[illegible]
	55	12·2[illegible]
5 15	0	13·3[illegible]
	30	12·1[illegible]
	35	11·1[illegible]
	40	11·[illegible]
	45	12·6[illegible]
	55	13·[illegible]
5 16	0	13·[illegible]

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
				5 16	10	25 15·76	12	485·4	13	569·9	6 2	45	25 24·22	47	507·9	48	840·3
	498·4	13	579·3		15	18·81	17	482·3	18	568·0		50	18·87	52	509·6	53	852·2
	517·0				20	19·73	22	495·0	23	573·4		55	19·64	57	511·8	58	859·5
	517·5	17	586·7		25	22·92	27	492·1	28	576·1	6 3	0	18·88	2	513·3	3	872·8
	514·2	18	585·3		30	23·11	32	495·8				5	18·54	7	507·5	8	882·3
	513·5	22	586·3		35	25·47						10	19·56	12	510·7	13	883·9
	510·0	23	585·0	5 17	0	26·16	2	498·7	3	549·6		15	23·66	17	517·3	18	885·4
	500·9	28	585·7		5	24·70	7	504·9	8	557·5		20	24·93	22	518·1	23	885·3
	502·3	30	588·3		10	23·52	12	514·9	13	560·0		25	25·22	27	521·2	28	883·7
	500·3	33	586·8		15	23·07	17	517·4	18	562·4		30	25·04	32	528·7	33	880·7
1	497·7				20	22·80	22	514·8	23	566·1		35	26·87	37	531·6	38	875·2
7	497·5	38	591·0		25	21·46	27	510·6	28	567·4		40	29·44	42	521·5	43	875·5
2	495·5	43	584·8		30	19·76	32	508·9	33	569·2		45	27·29	47	508·5	48	873·7
7	503·0	48	586·1	5 18	0	13·43	2	520·8	3	606·2		50	23·54	52	514·1	53	864·2
2	510·5	53	592·2		5	13·61	7	523·7	8	614·9		55	23·99	57	523·9	58	853·2
7	515·3	58	604·4		10	14·73	12	518·9	13	622·0	6 4	0	25·41	2	530·6	3	846·3
2	517·0	3	608·8		15	13·84	17	520·0	18	629·3		5	26·72	7	528·9	8	842·8
7	515·1	8	609·8		25	14·64	27	520·6	28	639·9		10	26·27	12	529·2	13	841·6
2	513·7	13	612·3	5 19	0	16·80	2	517·9	3	678·9		15	25·78	17	526·6	18	841·6
7	508·7	18	616·2									20	24·70	22	528·5	23	842·9
2	509·4	23	615·5	5 23	0	25 16·38	2	516·2	3	709·8		25	25·22	27	526·5	28	844·1
7	508·9	28	617·3		10	20·89	12	500·9	13	741·4		30	23·31	32	517·0	33	843·4
2	507·5	33	617·2		25	21·32	27	502·5	28	739·5		35	23·25	37	519·3	38	844·3
7	518·1	38	622·0		40	22·64	42	495·3	43	744·5		40	24·22	42	498·2	43	852·5
1	517·6				45	22·44	47	493·1	48	744·5				44	494·5		
2	517·4	43	614·8		50	23·25	52	493·9				45	19·51	47	498·9	48	856·4
6	512·9	48	606·8		55	22·96	57	495·6				49	13·50				
2	498·1	53	594·8	6 0	0	23·78	2	497·9	3	745·0		50	12·23	51	510·6		
6	495·4				10	24·86	12	503·5	13	746·2		51	11·44	52	515·4	53	853·1
7	495·6	58	583·8		15	24·64	17	501·9	18	749·0		53	11·28	54	519·9		
2	499·2	3	581·0		20	24·96	22	497·1	23	750·3		55	09·98	55	518·6		
7	501·5	8	579·8		25	24·60	27	500·0	28	752·2		56	09·91			56	851·7
2	505·1	13	580·8		30	27·17	32	488·8	33	761·4		57	10·03	57	524·0		
7	507·2	18	584·4				34	491·2				58	09·98			58	857·3
2	506·2	23	584·7		35	24·97	37	497·5	38	761·7				59	529·3		
7	507·2	28	587·4		40	23·63	42	498·6	43	763·1	6 5	0	10·67	2	530·5	3	848·3
2	505·7	33	588·1		45	24·52	47	515·2	48	765·1		5	11·77	7	528·7	8	844·3
7	501·6	38	583·5		50	24·87	52	512·2	53	766·8		10	12·85	12	528·0	13	850·9
2	503·9	43	579·4		55	24·77	57	508·9	58	769·4		15	13·67	17	525·3	18	839·7
7	499·0	48	575·7	6 1	0	23·99	2	507·9	3	771·0		20	14·96	22	523·1	23	837·2
2	498·4				5	22·78	7	506·7	8	772·0		25	16·77	27	516·5	28	832·8
7	496·0	58	571·4		10	23·16	12	509·9	13	769·6		30	17·61	32	514·5	33	825·8
2	497·1	3	571·6		15	22·53	17	514·9	18	768·7		35	18·35	37	513·5	38	820·5
7	497·5	8	572·2		20	23·34	22	521·3	23	769·4		40	19·04	42	513·6	43	814·5
2	485·7				25	25·46	27	520·9	28	771·3		50	19·78	52	514·7	53	811·7
7	497·3	18	568·4		30	26·27					6 6	0	20·94	2	515·2	3	804·6
22	500·3				31	26·52	32	515·3	33	774·9		15	21·56	17	518·4	18	800·4
27	503·6	28	570·0		35	25·61	37	510·5	38	776·2		40	20·58	42	517·7	43	792·2
32	508·6				40	25·29	42	512·6	43	775·9	6 7	0	19·35	2	517·3	3	787·9
37	510·0	38	573·4		45	25·22	47	515·9	48	774·7		10	16·75	12	513·2	13	785·6
12	510·6				50	25·19	52	519·4	53	775·1		20	17·29	22	518·5	23	783·1
17	512·9	48	575·5		55	26·16	57	522·2	58	775·7	6 8	0	18·00	2	514·7	3	762·6
52	510·0			6 2	0	27·07	2	523·3	3	775·5	6 9	0	15·71	2	519·0	3	759·1
57	505·4	58	578·1		5	28·92	7	525·0	8	775·4		15	12·42	17	526·4	18	752·7
2	502·9	3	581·3		10	30·44	12	522·1	13	779·1		20	11·88	22	529·9	23	750·3
32	498·2	33	584·5		15	31·72	17	518·0	18	784·6		25	13·29	27	527·7	28	749·0
37	496·5				20	30·91	22	521·0	23	789·8		30	14·62	32	525·6		
12	491·2	43	588·2		25	28·02	27	527·4	28	793·9	6 10	0	17·10	2	519·5	3	743·1
17	491·4				30	26·58	32	527·8	33	801·0	6 11	0	16·19	2	520·8	3	743·4
57	487·7	58	583·4		35	23·78	37	520·9	38	813·4		10	15·45	12	521·0	13	741·1
2	484·5	3	579·9		40	22·65	42	520·8	43	825·0		15	14·57	17	521·1	18	738·8

Bifilar. $k=0·000140$. Balance. $k=0·0000085$.

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
6 11	20	25 13·20	22	518·2	23	739·2
	25	10·90	27	518·0	28	737·7
	30	09·44	32	522·1	33	735·8
	35	10·25	37	522·1	38	736·1
	40	10·11	42	520·7	43	735·3
	45	10·04	47	518·7	48	735·5
	50	10·00	52	513·3	53	736·2
	55	08·82	57	511·1	58	737·9
6 12	0	08·80	2	511·3	3	738·7
	5	10·01	7	511·0	8	739·2
	10	11·42	12	510·2	13	740·7
	25	15·99	27	518·6	28	740·7
	30	17·49	32	518·1	33	737·9
	35	16·86	37	521·5	38	732·3
	40	15·59	42	526·0	43	724·8
	45	15·67	47	526·0	48	717·7
	50	14·75	52	523·8	53	711·6
	55	13·16	57	523·7	58	706·2
6 13	0	12·06	2	523·4	3	701·5
	5	11·89	7	520·4	8	699·9
	10	11·24	12	519·3	13	700·3
	15	10·77	17	518·2	18	701·1
	20	10·23	22	515·4	23	702·4
	25	09·89	27	513·9	28	701·5
	30	09·08	32	516·3	33	704·4
	35	11·02	37	515·6	38	707·1
	40	11·96				
	50	13·12	52	514·2	53	713·6
	55	14·13	57	514·0	58	718·1
6 14	0	14·87	2	513·8	3	721·8
	5	15·97	7	515·2	8	723·5
	10	16·75	12	514·8	13	724·8
	15	17·49				
6 15	0	19·10	2	517·5	3	733·3
	30	18·94	32	518·2	33	732·3
6 16	0	17·12	2	513·0	3	717·0
	5	17·54	7	512·9	8	717·5
	10	17·50	12	512·9		
6 17	0	27·79	2	485·1	3	620·0
	5	27·14	7	485·2	8	600·2
	10	26·14	12	489·6	13	587·7
	15	25·91	17	495·1	18	582·4
	20	26·07	21	498·3		
			22	497·6	23	582·4
	25	25·61	27	495·6	28	581·0
	30	23·48	32	495·1	33	580·7
	35	22·28	37	496·0	38	588·2
	40	21·88	42	499·4	43	597·3
	45	22·06	47	502·1	48	607·6
	50	23·93	52	502·4	53	612·4
	55	26·48	57	500·4	58	614·1
6 18	0	28·40	2	498·3	3	611·4
	5	29·14	7	499·6	8	606·5
	10	28·35	12	500·3	13	604·3
	15	29·19	17	504·3	18	604·3
	20	29·61	22	506·9	23	603·8
	25	32·26				
	26	32·66	27	506·9	28	606·0
	29	33·75				
	30	34·21	32	502·1	33	605·6
	35	33·63				

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
6 18	36	25 33·68	37	503·8	38	601·1
	40	32·49	42	505·8	43	597·9
	45	30·54	47	511·1	48	596·4
	50	29·31	52	511·2	53	597·0
	55	26·74	57	510·9	58	596·3
6 19	0	25·14	2	516·5	3	601·0
	5	23·81	7	517·3	8	604·4
	10	22·31	12	519·9	13	609·3
	15	21·76	17	518·0	18	614·8
	20	22·89	22	513·3	23	623·6
	25	21·34	27	509·0	28	628·8
	30	20·36	32	524·5	33	632·6
	35	22·85	37	518·2	38	639·4
	40	21·34	42	518·3	43	646·2
	45	20·15	47	518·4	48	652·2
	50	19·49	52	511·9	53	662·3
	55	18·41	57	518·4	58	663·9
6 20	0	17·74	2	519·9	3	668·7
	5	18·81	7	515·5	8	677·1
	10	17·27	12	512·0	13	683·2
	15	17·89	17	510·9	18	688·6
	20	18·03	22	510·8	23	692·7
	30	18·25	32	515·2	33	695·3
	35	18·16	37	515·7	38	697·7
	40	18·25	42	514·6	43	699·7
	50	16·84	52	515·3	53	703·8
	55	16·92	57	516·2	58	705·0
6 21	0	16·75	2	513·9	3	707·5
	10	15·47	12	511·9	13	713·6
	25	19·17	27	507·9	28	725·0
	30	19·55	32	507·0	33	725·3
6 22	0	18·20	2	507·3	3	729·0
	20	17·51	22	509·9	23	732·4
	30	20·03	32	509·8	33	736·5
6 23	0	19·55	2	504·6	3	742·4
	25	17·60	27	511·8	28	745·9
	40	21·48	42	511·5	43	751·3
	45	22·33	47	506·9	48	751·5
	50	21·21	52	512·3	53	750·6
	55	20·53	57	511·0		
7 0	0	20·96	2	508·4	3	750·0
	5	21·43	7	509·2	8	749·3
	10	21·83	12	512·3		
	15	21·41	17	513·8	18	748·6
	20	21·63	22	509·5		
	25	20·85	27	512·2	28	749·6
7 1	0	21·03	2	514·9	3	745·2
	25	23·45	27	519·6	28	747·9
7 2	0	25·19	2	509·9	3	762·8
7 3	0	18·47	2	528·2	3	813·1
	5	17·07	7	528·6	8	817·5
	10	19·12	12	529·3	13	820·3
	15	20·11	17	531·5	18	822·6
	20	21·39	22	532·6		
	25	22·03	27	529·1	28	825·3
	30	20·62	32	524·5		
	35	21·06	37	528·4	38	826·2
	40	21·12	42	525·7		
	45	21·32	47	531·1	48	830·9
	50	22·40	52	527·4	53	837·7
	55	21·23	57	512·4	58	848·1

Gött. Mean Time.	Declination.	
d. h.	Min.	° ′
7 4	0	25 16·28
	5	13·99
	10	10·95
	15	10·33
	20	13·59
	25	15·47
	30	17·06
	35	18·90
	40	20·43
	45	20·67
	50	17·68
	55	17·20
7 5	0	18·77
	5	19·48
	10	20·89
	15	21·50
	20	20·76
	25	17·37
	30	14·23
	35	05·83
	37	25 01·76
	40	24 59·07
	42	24 58·25
	44	24 59·79
	45	25 01·90
	47	05·89
	50	12·09
	55	03·84
	57	00·34
7 6	0	01·11
	4	04·2[illegible]
	5	05·3[illegible]
	7	05·6[illegible]
	9	05·0[illegible]
	10	04·9[illegible]
	15	07·0[illegible]
	19	02·3[illegible]
	20	01·5[illegible]

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

March 7d 5h 30m—40m. The declination magnet vibrating 3′ – 5′.

Bifilar orrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
n.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
2	521·1	3	850·8	7 6	25	25 05·90	25	519·4			7 10	10	25 15·38	12	507·2	13	739·5
7	529·1	8	855·2				27	520·7				15	12·51	17	516·1	18	736·2
2	530·8	13	858·4				28	522·2	28	835·7				19	533·8		
7	540·0	18	859·3		30	24 57·98	32	523·9	33	834·9		20	09·12				
2	532·5				35	24 59·84	37	522·2	38	838·0		21	11·41	22	547·8	23	713·7
7	522·9	28	855·4		40	25 00·96	42	516·5	43	839·3				24	539·6		
2	516·4				45	03·34	47	512·6	48	840·3		25	20·58				
7	517·0	38	851·9		50	04·81	52	511·4	53	839·5		26	21·21	27	527·2	28	698·9
2	513·8	43	849·1		55	06·48	57	513·2						29	527·4		
7	506·6	48	849·4	7 7	0	09·51	2	508·0	3	844·0		30	24·82				
2	517·1	53	847·4		5	07·81	7	508·7	8	841·5		31	26·00	32	518·8	33	683·7
7	531·6	58	844·7		10	06·43	12	508·4	13	840·6				34	513·6		
2	529·5	3	846·7		15	05·09	17	516·7	18	834·7		35	26·97				
7	527·9	8	846·9		20	07·18	22	515·7	23	832·1		36	26·68	37	508·9	38	669·9
2	527·8	13	848·2		25	08·19	27	516·5	28	828·4				39	506·5		
7	529·5	18	852·4		30	09·39	32	519·1	33	824·9		40	26·13				
2	514·0	23	860·7		35	12·06	37	508·7	38	828·2		41	27·22	42	509·3	43	654·1
7	520·3	28	867·2		40	12·35	42	506·4	43	828·5				44	500·8		
2	518·8	33	879·0		45	13·77	47	504·4	48	833·2		45	24·22				
					50	12·89	52	505·0	53	835·0		46	20·77	47	506·6	48	637·7
7	531·8	38	875·0		55	14·46	57	506·5	58	835·5				49	520·0		
0	546·8			7 8	0	14·85	2	507·6	3	834·6		50	19·91				
2	558·7	43	864·0		5	15·05	7	512·3	8	830·7		51	21·01	52	518·9	53	616·9
4	570·4			*	25	15·54	27	510·7	28	822·4				54	515·9		
5	574·3				30	14·77	32	509·6	33	818·9		55	22·15				
6	573·2	46	856·4		35	12·38	37	517·6	38	807·4		56	22·28	57	516·2	58	606·0
7	572·0						39	526·1						59	517·8		
8	569·3	48	856·4		40	12·58	42	526·6	43	787·1	7 11	0	22·31	2	514·7	3	601·1
9	563·2				44	16·72						5	22·87	7	513·5	8	602·5
0	553·7				45	18·72	47	524·1	48	779·3		10	24·22	12	504·7	13	599·4
1	542·6				49	27·07	49	512·7				15	24·96	17	498·8	18	590·8
2	534·0				50	26·90	50	507·3						19	500·2		
3	526·9	53	868·9				51	504·0	51	770·6		20	24·73	22	502·2	23	590·9
4	521·3				52	26·92	52	506·4						24	496·0		
5	521·6						53	511·1	53	758·5		25	25·04	27	489·5	28	585·6
6	528·1	56	862·1		54	25·88	54	511·6				30	21·93	32	487·7	33	580·9
7	538·7				55	24·99	55	514·4				35	16·75	37	494·1	38	575·3
8	547·2	58	853·6				56	514·1	56	736·1				39	506·0		
9	550·4				57	24·23	57	511·9				40	13·52	42	515·9	43	585·0
0	552·3						58	510·4	58	724·5				44	516·1		
1	556·5				59	22·94	59	508·7				45	11·39	47	516·3	48	590·5
2	559·2			7 9	0	21·95	0	507·8						49	524·7		
3	559·5	3	841·2				1	506·4	1	712·6		50	10·21	52	520·7	53	594·6
4	559·1				2	20·13	2	508·0	3	710·3				54	518·0		
5	556·8						4	509·1				55	08·95	57	515·5	58	598·5
6	553·0	6	840·2		5	17·00	5	510·2			7 12	0	06·21	2	519·6	3	605·7
7	548·2						6	511·3	6	714·2		5	02·23	7	528·0	8	609·4
8	546·7	8	840·3		7	15·98	7	510·1						9	531·4		
9	546·0						8	510·1	8	717·0		10	01·07	12	527·9	13	609·0
10	546·1						9	510·2				15	01·18	17	527·2	18	611·1
11	547·7	11	838·0		10	13·19	12	515·9	13	734·2		20	03·41	22	521·5	23	618·1
12	548·5						14	520·4				25	05·62	27	513·3	28	625·8
13	545·1	13	836·5		15	09·27	17	522·8	18	739·5		30	06·43	32	506·5	33	633·4
14	540·4				20	10·75	22	517·9	23	746·7		35	06·12	37	506·0	38	637·2
15	535·7				25	09·54	27	516·4	28	756·5		40	06·12	42	503·7	43	642·5
17	526·4	17	839·8		30	07·27	32	516·8	33	761·7		45	06·01	47	507·4	48	646·9
18	525·1	18	838·4		35	06·77	37	517·6	38	765·3		50	06·81	52	504·4	53	647·9
19	525·4						52	515·4	53	751·6				54	502·5		
20	526·2				55	13·27	57	518·2	58	744·4		55	06·66	57	498·3	59	648·6
22	521·6			7 10	0	15·07	2	514·7	3	740·7	7 13	0	07·35	2	496·2	3	649·4
23	519·8	23	836·0		5	15·91	7	508·1	8	740·0		5	08·72	7	497·4	8	656·5

Bifilar. $k=0·000140$. Balance. $k=0·0000085$.

March 7ᵈ 8ʰ 35ᵐ—50ᵐ. The declination magnet vibrating 3′, and the bifilar 10—20 divisions. 10ʰ 21ᵐ. Declination magnet vibrating 5′, and bifilar 8—10 divisions. 10ʰ 46ᵐ. Declination magnet 3′, and bifilar 11 divisions.

* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′
7 13	10	25 10·23	12	488·5	13	655·7	7 17	15	25 10·74	17	519·1	18	650·3	7 22	0	25 21·06
			14	487·5				20	12·35	22	516·3	23	655·5		5	19·64
	15	11·35	17	487·4	18	655·7		40	18·16	42	507·2	43	667·3		10	19·21
	20	12·58	22	487·7	23	652·4	7 18	0	18·08	2	503·2	3	666·0		15	19·37
	25	14·03	27	485·9	28	651·6		15	18·90	17	499·4	18	662·6		19	20·63
			29	485·6				20	18·88	22	500·8	23	659·5		20	20·62
	30	16·05	32	489·9	33	652·1		25	17·15	27	505·0	28	659·6		25	21·21
			34	490·0				30	16·82	32	508·1	33	673·9		30	19·34
	35	17·24	37	493·3	38	653·2				42	517·1	43	684·1		35	18·99
	40	18·50	42	498·1	43	653·0		45	19·35	47	516·8	48	692·7		40	18·14
	45	18·21	47	507·4	48	654·5		50	21·17	52	512·7	53	696·2		45	17·83
	50	18·87	52	517·1	53	654·7		55	21·71	57	511·6	58	695·4		50	18·82
	55	19·46	57	508·2	58	655·6	7 19	0	22·24	2	517·6	3	695·6		55	20·79
7 14	0	18·68	2	512·3	3	660·2		5	22·35	7	519·2	8	692·8	7 23	0	18·23
	31	20·09	32	500·3	33	655·6		10	22·25	12	523·7	13	691·2		5	20·22
	35	20·15	37	495·8	38	650·3		15	24·08	17	520·5	18	690·0		10	20·45
	40	22·44	42	491·8	43	638·9		20	22·47	22	519·7	23	686·0		15	19·98
			44	483·8				25	20·89	27	518·0	28	686·2		20	20·03
	45	23·34	47	480·0	48	621·5		30	20·58	32	518·3	33	685·4		25	19·78
			49	483·2				35	19·82	37	520·4	38	687·8		30	19·98
	50	25·87						40	20·85	42	518·6	43	693·9		35	19·58
	51	26·58	52	483·8	53	610·2		45	22·00	47	514·5	48	697·7	8 0	0	20·90
			54	483·6				50	21·48	52	515·1	53	696·2			
	55	30·58						55	20·80	57	520·7	58	696·3	8 5	0	25 20·49
	56	31·75	57	485·9	58	599·6	7 20	0	24·59	2	523·8	3	699·0		5	19·84
			59	486·2				5	24·15	7	515·7	8	700·6		10	19·53
7 15	0	32·62	2	489·7	3	582·6		10	23·39						15	19·49
	1	32·32	4	492·2				11	22·13	12	506·8	13	704·3		20	19·68
	5	31·05	7	496·1	8	553·7		14	21·36						25	19·96
			9	495·1				15	21·01	16	506·7				30	19·32
	10	31·25								17	508·5	18	705·6		35	19·19
	11	31·14	12	492·2	13	533·9		19	19·91						40	19·73
			14	492·5				20	19·59	22	511·4	23	705·1		45	20·06
	15	30·44						25	19·53	27	510·7	28	709·5		50	18·57
	16	29·93	17	493·5	18	533·1		29	21·36						55	18·47
			19	495·3				30	21·97	31	506·4			8 6	0	18·27
	20	26·79								32	504·7	33	716·3		5	18·37
	21	26·11	22	491·0	23	537·7				34	501·3				10	18·79
			24	492·1				35	21·73	37	499·2	38	721·8		15	16·10
	25	22·82	27	491·0	28	540·3				39	497·3				20	16·79
			29	491·4				40	21·59						25	16·97
	30	19·26	32	492·3	33	540·9		41	21·06	42	494·6	43	724·0		30	15·56
			34	498·2						44	493·7				35	14·65
	35	16·95	37	505·4	38	544·6		45	20·08	47	494·0	48	726·4		40	13·41
			39	500·0						49	494·5				45	10·75
	40	15·54	42	501·1	43	549·4		50	20·99	52	496·5	53	728·2			
	45	17·37	47	501·4	48	559·5		55	20·40	57	497·9	58	728·1		50	06·56
	50	18·55	52	493·2	53	558·2	7 21	0	20·72	2	496·9	3	731·0		55	05·74
	55	17·70	57	485·7	58	547·4		5	21·66	7	492·9	8	738·1	8 7	0	05·40
			59	487·5				10	22·37	12	490·3	13	747·7		5	06·07
7 16	0	17·60	2	491·5	3	547·8		15	25·02	17	485·1	18	755·3		10	08·75
	5	18·84	7	489·8	8	558·8		20	25·53	22	488·9	23	757·6		15	10·23
	10	16·60	12	496·3	13	575·8		25	27·41	27	488·0	28	755·9		20	10·28
	15	15·94	17	501·3	18	590·5		30	27·58	32	496·5	33	753·0		25	09·00
	20	15·44	22	502·0	23	602·6		35	25·47	37	494·6	38	749·1		30	06·86
	25	15·17	27	499·3	28	609·2		40	25·24	42	502·2	43	744·4		35	05·35
	40	11·68	42	508·8	43	618·5		45	25·31						40	05·33
	45	11·42	47	511·2	48	623·5		46	24·73	47	504·4	48	742·7		45	07·18
	50	11·62	52	514·8	53	622·7		49	25·16						50	08·18
7 17	0	11·32	2	518·6	3	626·0		50	25·09	52	501·3	53	742·9		55	09·49
	10	09·79	12	519·2	13	641·8		55	22·80	57	506·0	58	741·1	8 8	0	11·21

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

March 7d 20h 5m. Declination magnet vibrating 3′.
March 8d 6h 20m. Clock 2s fast; set right.

BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
2	508·7	3	740·3	8 8	10	25 11·84	12	518·4	13	801·0	8 15	20	25 16·15	22	516·1	23	669·9
7	512·7	8	738·5		20	12·85	22	515·1	23	800·3		25	15·51	27	515·1	28	676·3
12	514·4	13	740·4		30	13·46	32	517·7	33	796·4		30	15·39	32	515·8	33	682·3
17	518·8	18	738·8		45	14·40	47	519·9	48	792·1		35	15·02	37	515·3	38	689·8
				8 9	0	14·13	2	518·1	3	791·6		40	15·29	42	515·5	43	697·8
22	514·7	23	741·7		40	18·27	42	516·8	43	719·8		45	15·72	47	515·9	48	703·5
27	508·3	28	744·5		45	17·68	47	522·5	48	708·8		50	15·47	52	515·4	53	705·9
32	508·0	33	743·8		50	18·57	52	523·6	53	701·3		55	15·05	57	517·7	58	708·0
37	511·6	38	742·1		55	18·84	57	525·5	58	695·1	8 16	0	15·51	2	517·6	3	710·7
42	514·4	43	741·2	8 10	0	19·86	2	520·6	3	691·9		30	15·52	32	514·3	33	722·6
47	512·3	48	740·9		5	18·45	7	516·3	8	686·5	8 17	0	17·76	2	516·9	3	729·8
52	513·2	53	744·3		10	15·61	12	516·0	13	679·7		10	17·80	12	517·5	13	731·7
57	513·4	58	744·7		15	13·41	17	516·4	18	677·4		20	17·42	22	518·4	23	733·6
2	509·5	3	745·9		20	13·36	22	515·5	23	677·8	8 18	0	17·24	2	517·5	3	740·7
7	511·2	8	747·7		25	14·26	27	505·7	28	683·6	8 21	0	17·49	2	515·9	3	756·5
12	511·3	13	748·1		30	12·95	32	501·2	33	685·5		10	17·91	12	514·8	13	756·0
17	512·6	18	747·3		35	10·85	37	504·7	38	694·5		15	18·18	17	509·6		
22	511·6				40	08·92	42	510·0	43	699·7		20	17·81	22	515·1	23	753·1
27	511·8	28	746·5		45	10·60	47	507·2	48	703·5		25	17·44				
32	512·8				50	11·98	52	504·6	53	708·6	8 22	0	18·07	2	510·2	3	759·2
37	513·7				55	12·76	57	504·2	58	711·5							
2	513·5	3	747·3	8 11	0	11·52	2	513·7	3	707·0	9 6	0	25 13·46	2	525·5	3	799·2
					5	09·62	7	526·5	8	702·2		20	10·74	22	515·7	23	799·8
2	526·6	3	783·8		10	12·45	12	523·1	13	700·0		30	10·33	32	517·8	33	796·4
7	523·9	8	782·1		15	14·08	17	518·0	18	699·5		35	10·65	37	528·8	38	797·7
12	520·1	13	783·0		20	15·29	22	514·4	23	699·8		40	11·61	42	524·5		
17	528·8	18	781·5		25	15·47	27	515·2				45	12·31	47	525·6	48	796·5
22	527·1	23	782·4		30	15·07	32	518·5	33	698·3		50	13·39	52	525·3		
27	531·5	28	785·6		35	14·84	37	523·8			9 7	0	15·54	2	525·9	3	793·0
32	524·4	33	788·2		40	15·42	42	523·5	43	700·5	9 8	0	17·56	2	524·5	3	768·5
37	525·8	38	789·7		45	15·41	47	521·7	48	703·1	9 9	0	05·35	2	535·0	3	760·1
42	527·2	43	792·3		50	15·58	52	519·6	53	707·8		5	07·02	7	528·9	8	761·4
47	519·9	48	794·7		55	15·12	57	518·0	58	711·5		10	10·31	12	521·5	13	763·1
52	525·1	53	793·3	8 12	0	14·13	2	516·8	3	713·2		15	12·08	17	513·7	18	765·0
57	534·4	58	794·4		5	12·85	7	518·7	8	715·4		20	14·10	22	510·9	23	766·3
2	526·7	3	801·2		10	12·83	12	519·9	13	717·2		25	16·10	27	512·2	28	763·2
7	521·7	8	809·6		15	13·93	17	517·6	18	720·3		30	15·44	32	519·6	33	754·0
12	513·7	13	816·5		30	14·73	32	516·6	33	722·7		35	15·04	37	521·3	38	747·8
17	520·5	18	817·7	8 13	0	15·36	2	513·6	3	726·8		40	14·11	42	519·8	43	743·6
22	515·7	23	822·3		10	15·85	12	517·4	13	729·1		45	13·09	47	517·1	48	741·2
27	516·4	28	823·9		25	17·13	27	517·8	28	722·7		50	11·54	52	521·1	53	738·7
32	514·9	33	825·7		40	20·00	42	511·8	43	712·0		55	10·36	57	526·4		
37	518·4	38	827·8		45	22·37	47	506·8	48	704·6	9 10	0	10·11	2	529·7	3	733·3
42	512·5	43	828·7		50	24·82	52	501·9	53	697·5		5	09·96	7	530·1	8	732·5
47	510·0	48	832·0		55	26·87	57	499·2	58	686·3		10	09·91	12	531·1	13	733·6
49	505·1			8 14	0	28·50	2	493·4	3	667·0		15	10·41	17	529·9		
52	509·7	53	833·4		5	29·41	7	491·7	8	649·6		25	10·63	27	527·8		
57	512·4	58	833·8		10	28·94	12	492·6	13	633·6	9 11	0	14·06	2	517·3	3	728·6
2	516·8	3	831·6		15	28·27	17	495·8	18	624·2		5	13·44	7	514·0	8	730·7
7	527·1	8	830·7		20	27·17	22	496·7	23	616·9		10	11·98	12	515·1	13	731·1
12	525·9	13	829·2		25	27·59	27	498·3	28	616·9		15	11·44	17	516·9	18	730·6
17	521·9	18	828·0		30	27·41	32	499·5	33	619·3		20	12·22				
22	510·2	23	828·6		35	26·54	37	501·3	38	619·8		30	12·98	32	516·0	33	730·1
27	508·5	28	826·4		40	24·48	42	504·8			9 12	0	16·32	2	508·0	3	734·8
32	510·6	33	822·6		45	23·81	47	507·6	48	625·6		5	18·81	7	507·4	8	734·0
37	520·1	38	816·9		50	22·27	52	511·4	53	629·8		10	19·53	12	507·0	13	730·2
42	526·5	43	813·2		55	20·90	57	514·4	58	634·8		15	19·41	17	510·2	18	723·6
47	526·3	48	810·7	8 15	0	19·64	2	516·4	3	644·2		20	19·44	22	514·2	23	718·4
52	524·2	53	807·5		5	18·13	7	517·3	8	646·1		25	19·39	27	517·4	28	712·5
57	523·5	58	806·0		10	16·87	12	517·6	13	656·0		30	19·64	32	517·2	33	705·3
2	519·9	3	804·1		15	16·80	17	516·9	18	661·5		35	19·55	37	513·4	38	699·7

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
9 12	40	25 18·54	42	511·8	43	695·8
*	45	18·11	47	513·3	48	697·0
10 17	0	25 14·04	2	515·7	3	741·4
	10	15·07	12	515·7	13	746·0
	20	16·82	22	517·7	23	747·9
	45	17·56				
10 18	0	17·42	2	519·8	3	746·1
10 19	0	16·01	2	520·3	3	745·7
	15	17·42	17	517·6	18	748·2
10 20	0	16·95	2	517·7	3	752·7
11 10	0	25 14·73	2	517·4	3	741·7
	10	13·86	12	513·7	13	744·9
	20	13·44	22	508·5	23	750·3
	25	12·11	27	510·7	28	752·7
	30	11·57	32	510·8	33	754·1
	35	10·74	37	513·6	38	754·9
	40	11·61	42	515·5	43	754·0
	45	11·84	47	514·4	48	757·2
	50	14·41	52	511·9	53	757·8
11 11	0	15·11	2	512·1	3	757·7
	5	14·87	7	512·2	8	755·8
	10	14·84	12	512·6		
	15	14·65	17	511·4	18	756·3
	20	17·13	22	510·5	23	756·2
	25	17·07	27	510·3	28	754·0
	30	16·26	32	513·2	33	751·9
	35	16·21	37	514·3	38	751·7
	45	16·08	47	515·0	48	750·0
11 12	0	15·47	2	519·5	3	746·1
12 2	0	25 25·33	2	517·1	3	763·2
	30	24·82	32	518·4	33	766·6
12 3	0	25·16	2	517·4	3	769·6
12 11	0	19·46	2	532·3	3	736·0
*	5	18·14	7	527·0	8	731·2
	10	16·25	12	524·9	13	726·4
	15	14·94	17	525·7	18	725·1
	20	14·73	22	525·5	23	722·4
	25	14·68	27	525·7	28	720·5
	30	14·37	32	526·6	33	719·6
	35	15·47	37	525·2	38	716·9
	40	15·98				
12 12	0	14·06	2	520·7	3	711·8
	5	13·76	7	519·3	8	712·1
	10	13·46	12	517·9	13	711·7
	15	12·95	17	517·1	18	712·1
	20	12·78	22	517·7	23	712·0
	25	12·73	27	517·8	28	713·4
	30	13·19	32	515·8	33	715·3
	35	13·43	37	514·7	38	716·3
	40	13·97	42	513·5	43	717·6
	45	14·20	47	512·5	48	720·3
	50	14·38	52	511·5	53	721·5
	55	14·33	57	511·2	58	722·8
12 13	0	14·40	2	510·9	3	723·7
	5	14·20	7	512·1	8	724·7
	10	14·68				
12 14	0	14·18	2	517·7	3	718·6

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
17 17	0	25 19·34	2	519·1	3	734·2
	25	18·72	27	524·9	28	724·4
	30	18·05	32	526·1	33	722·2
	35	17·42	37	526·9		
	40	16·82	42	527·3		
17 18	0	15·91	2	524·4	3	723·0
17 21	0	13·69	2	519·0	3	739·3
	10	13·83	12	529·5	13	740·2
	15	13·12				
17 22	0	14·17	2	514·6	3	738·9
18 9	0	25 11·22	2	519·7	3	767·2
	5	07·11	7	525·0	8	768·0
	10	06·19	12	524·7	13	772·4
	15	05·70	17	524·0	18	775·6
	20	06·12	22	521·7	23	777·4
	25	07·72	27	518·8	28	777·7
	30	09·15	32	516·7	33	779·2
	35	10·51	37	515·2	38	778·4
	40	10·36	42	520·0	43	773·6
	45	11·12	47	526·5	48	768·7
	50	11·98	52	527·3	53	763·2
	55	12·38	57	525·9	58	760·7
18 10	0	12·93	2	523·3	3	759·1
	15	11·44	17	510·9	18	754·0
	20	11·03	22	522·3	23	751·8
	25	10·70	27	523·1	28	749·5
	30	10·70	32	523·1	33	747·0
	40	10·63	42	522·0	43	742·1
	45	09·54	47	522·5	48	738·8
	50	09·27	52	519·4	53	739·2
	55	09·60	57	517·5	58	740·3
18 11	0	09·59	2	518·3	3	740·8
	5	08·97	7	519·7	8	740·0
	10	08·75	12	519·4	13	740·9
	15	09·08	17	519·3	18	741·1
	20	08·97	22	518·6	23	741·8
	25	08·70				
	30	09·49				
	35	10·07	37	522·4	38	741·5
	45	11·39	47	523·8	48	740·6
	55	12·78	57	525·1	58	738·8
18 12	0	13·44	2	524·7	3	738·6
	5	14·06	7	524·5	8	739·0
18 13	0	15·98	2	512·9	3	735·5
18 17	0	11·41	2	520·9	3	724·9
	15	13·59	17	524·0	18	725·9
	20	14·48	22	523·3	23	726·6
			42	524·0	43	723·5
	45	14·85	47	525·0	48	722·4
	50	14·81	52	527·8	53	721·2
	55	14·60	57	527·9	58	720·5
18 18	0	14·06	2	528·9	3	720·1
	10	13·12	12	530·6	13	718·0
	15	13·36				
18 19	0	14·80	2	523·0	3	721·4
18 22	0	16·36	2	497·1	3	732·7
	10	18·16	12	492·3	13	736·0
	15	19·31	17	489·3	18	737·8
	20	18·70	22	486·0	23	738·6
	25	19·48	27	486·9	28	737·0

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′
18 22	30	25 20·82
	35	22·25
	40	23·54
	45	24·96
	50	26·21
	55	26·57
18 23	0	26·94
	5	27·22
	10	26·25
	15	25·19
	20	23·72
	25	22·89
	30	22·18
	35	21·29
	40	20·58
	45	20·18
	50	20·25
	55	19·86
19 0	0	20·11
19 8	0	25 10·09
	5	10·09
	10	10·83
	30	12·09
	35	14·89
	40	16·15
	45	16·80
	50	17·46
	55	17·02
19 9	0	17·15
	5	17·49
	10	18·10
	15	16·84
	20	17·87
	25	16·63
	30	16·65
	35	16·72
19 10	0	15·32
	5	15·38
	10	15·41
19 11	0	15·56
19 17	0	25 19·93
	10	20·72
	15	20·70
	20	20·16
	25	19·61
19 18	0	17·02
19 19	0	17·84
	35	17·47
	40	17·56
19 20	0	17·17
21 11	0	25 14·77
	10	14·17
	20	15·54
21 12	0	15·62
22 9	0	25 15·56
	5	14·53

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

March $19^d\ 8^h\ 30^m$—40^m. Declination magnet vibrating 4′.

* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.
32	489·7	33	736·5
37	490·0	38	737·4
42	492·3	43	736·1
47	493·6	48	735·8
52	492·4		
57	495·4	58	730·7
2	491·6	3	729·3
7	503·6	8	726·5
12	496·7	13	720·3
17	498·1	18	717·0
22	498·3	23	713·7
27	501·0	28	712·9
32	501·6	33	712·4
37	502·1	38	713·8
42	504·0	43	714·6
47	506·8	48	716·5
52	508·4		
57	509·4	58	719·9
2	513·4	3	719·9
2	518·4	3	770·4
7	518·7	8	773·8
32	537·4	33	759·0
37	536·8	38	755·7
42	534·4	43	754·0
47	528·7	48	754·1
52	524·1	53	754·2
56	538·9		
57	541·8	58	741·3
2	542·7	3	734·0
7	539·5	8	731·2
12	532·1	13	729·7
17	531·4	18	730·5
22	524·7	23	732·5
27	524·6	28	735·8
32	522·7	33	738·3
2	521·7	3	745·6
7	522·2	8	747·6
12	523·0	13	747·4
2	525·7	3	740·8
2	517·2	3	735·9
12	519·6	13	732·2
17	520·1		
22	521·5	23	729·8
27	522·2	28	727·8
2	517·8	3	720·1
2	525·4	3	709·8
37	525·7	38	710·9
42	526·4	43	711·4
2	525·8	3	712·4
2	522·9	3	717·5
12	524·2	13	721·2
22	524·7	23	723·5
2	526·1	3	723·4
2	523·9	3	735·5
7	526·6	8	741·8

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
22 9	10	25 15·44	12	527·1	13	745·4
	15	16·21	17	525·5	18	747·3
	20	16·68	22	525·5	23	748·6
	25	16·77				
	30	16·66	32	525·3	33	748·8
22 10	0	16·01	2	520·2	3	750·8
	5	15·34	7	522·1	8	750·3
	10	14·23	12	522·5	13	750·3
	15	14·15	17	524·6	18	750·2
	20	14·03				
22 11	0	12·83	2	526·2	3	734·3
26 10	0	25 18·16	2	529·3	3	736·0
	10	18·43	12	533·4	13	734·7
	20	18·27	22	530·4	23	736·2
26 11	0	18·16	2	530·7	3	733·0
27 7	0	25 14·71	2	524·4	3	793·7
	30	19·62	32	520·9	33	785·3
27 8	0	19·56	2	527·4	3	772·4
27 13	0	10·70	2	539·4	3	684·0
	15	09·40	17	524·6	18	674·3
	20	08·61	22	525·0	23	673·7
	25	08·82	27	525·2	28	673·8
	30	10·56	32	524·7	33	673·6
	35	11·24	37	523·1	38	681·2
	55	12·65	57	519·6	58	685·8
27 14	0	12·98	2	518·5	3	689·9
	5	13·49	7	517·4	8	692·0
	10	13·93	12	516·7	13	694·6
	15	14·13	17	516·3	18	699·3
27 15	0	14·70	2	519·3	3	720·2
28 8	0	25 15·51	2	524·5	3	773·5
	15	14·98	17	519·8	18	779·5
	20	13·54	22	522·9	23	780·0
	25	13·67	27	526·2	28	779·0
	30	15·51	32	527·5	33	779·0
	35	16·21	37	526·9	38	777·4
	40	16·79				
28 9	0	18·08	2	530·9	3	764·0
28 10	0	18·11	2	528·1	3	753·4
	30	18·27	32	526·0	33	755·7
28 11	0	18·16	2	528·0	3	751·1
29 0	0	25 22·15	2	516·2	3	731·9
	25	22·33	27	513·6	28	731·4
	30	22·08	32	513·4	33	731·2
29 1	0	22·85	2	514·0	3	733·0
29 8	0	25 18·21	2	540·6	3	739·0
	10	18·82	12	530·1	13	740·5
	15	18·57	17	534·1		
	20	17·61	22	541·8	23	739·4
	25	17·98	27	536·1		
	30	18·16	32	539·5	33	739·1
29 9	0	17·46	2	533·2	3	748·9
	56	21·0	56	484·7		
			57	479·2	58	744·1
			59	466·4		
29 10	0	26·23	1	457·2	1	703·0

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
29 10			2	457·6		
			3	462·6	3	679·1
	5	25 25·78	4	461·9		
	6	24·93	7	463·0	8	635·9
	10	19·93	9	470·6		
			11	478·3	11	625·8
			12	477·9		
	14	16·99	13	479·4	13	620·9
	15	16·23	16	480·2	16	612·6
			17	479·0	18	604·1
	20	18·58	19	485·8		
	21	06·90	22	493·3	23	630·5
	25	01·92	24	507·6		
	26	25 00·53	27	509·5	28	660·4
	30	24 57·14	29	514·5		
	31	56·08	32	520·5	33	675·5
	34	55·83				
	35	54·63	37	506·9	38	670·0
	36	53·83	39	513·2		
	40	52·84				
	41	53·05	42	504·1	43	662·5
	45	53·96	44	497·8		
	46	54·18	47	499·3	48	657·8
	50	55·15	52	490·5	53	663·2
			54	484·1		
	55	55·58	57	479·8	58	657·6
29 11	0	52·13	2	476·7	3	652·8
	5	48·50				
	6	48·00	7	477·0		
	8	47·22			8	633·9
	10	47·35				
	11	47·77	12	478·3	13	619·5
	15	48·75	14	477·1		
	16	49·15	17	478·9	18	616·0
			19	479·3		
	20	49·91	21	477·0	22	619·2
			23	479·0		
	25	51·50				
*	26	51·69	27½	483·6	28	633·0
			29	481·7		
	30	52·77	31	477·3		
			32	476·9	33	624·5
	35	53·24	37	471·7	38	617·5
	40	53·79	42½	472·6	43	612·1
	45	54·97	47	472·4	48	608·0
	50	56·25	52	479·9	53	617·8
	55	24 58·97	57	474·3	58	621·8
29 12	0	25 00·53	2	475·0	3	619·0
*	5	01·96	7	482·5	8	619·4
	10	04·42	12	485·1	13	607·2
	15	06·79	17	489·8	18	586·0
	20	07·31	22	495·5	23	560·9
	25	08·12	27	492·9	28	538·2
	30	07·10	32	485·4	33	497·3
	35	25 03·27	37	493·0	38	480·2
	40	24 59·91	42	496·6	43	471·0
	45	56·68	47	488·8	48	455·9
	50	55·04	52	489·2	53	444·1
	55	52·60	57	490·5	58	431·9
29 13	0	53·27	2	489·7	3	419·1
*	5	54·99	7	488·8	8	399·1

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

March 26^d 10^h 20^m. The bifilar magnetometer seems to be slightly disturbed; the declination is quite steady.
* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′
29 13	10	24 54·38	12	474·8	13	378·1	29 14	25	25 22·45	25	423·4			29 16	55	25 11·44
	15	50·46	17	485·2	18	358·2				26	425·8	26	377·3	29 17	0	10·77
	20	48·40	22	466·1	23	324·8		27	23·95	27	427·8				30	13·66
	25	50·90	26	439·7				28	24·48	28	431·9				35	15·74
			27	435·6	28	289·0				29	431·8	29	364·8		40	17·89
			29	431·2				30	23·22	30	434·4				45	20·27
	30	55·27	30	426·7						31	437·5	31	369·5		50	17·87
			31	423·8	31	286·9		32	22·04	32	423·6				55	15·78
	32	55·56	32	419·2				33	22·53	33	452·0			29 18	0	12·46
	33	55·15	33	416·1						34	448·8	34	387·2		5	10·47
			34	412·8	34	283·6		35	23·43	35	445·5					
	35	56·95	35	407·7						36	446·0	36	391·1		10	15·24
			36	407·0	36	286·6		37	24·48	37	441·3					
	37	57·98	37	408·6				38	24·33	38	437·2					
	38	24 59·16	38	412·4						39	440·5	39	382·4		15	21·16
			39	412·4	39	298·6		40	23·54	40	441·4					
	40	25 00·75	40	415·2						41	441·2	41	376·2			
			41	416·7	41	308·7		42	23·25	42	438·8				20	24·82
	42	25 00·53	42	416·8				43	23·07	43	437·8					
	43	25 00·38	43	412·5						44	434·4	44	374·9			
			44	405·9	44	318·3		45	23·72	45	434·1				25	28·35
	45	24 59·10	45	402·2						47	426·4	48	387·4			
			46	395·7	46	324·4	*	50	26·99	52	413·9	53	364·3			
	47	24 56·99	47	383·6				55	21·91	57	410·9	58	362·3		30	28·43
	48	24 59·09	48	379·8			29 15	0	18·38	2	414·1	3	308·3			
			49	382·1	49	328·7		5	13·74	7	417·8	8	317·0			
	50	24 58·76	50	383·6				10	16·82	12	419·7	13	323·8		35	27·08
			51	387·5	51	340·4		15	22·82	17	403·1	18	302·9		40	27·26
	52	24 57·58	52	390·9				20	23·75	22	396·7	23	294·5		45	26·25
	53	25 00·30	53	393·9				25	23·83	27	395·7	28	281·0		50	24·37
			54	400·3	54	326·3		30	19·05	32	456·4				55	22·92
	55	04·96	55	397·6						33	468·5	33	281·8	29 19	0	21·88
			56	394·0	56	354·1				34	471·2				5	19·37
	57	05·49	57	390·2				35	11·95	35	469·7				10	19·41
	58	06·43	58	388·3						36	471·4	36	332·9		15	21·07
			59	384·0	59	332·7		37	12·92	37	478·1				20	17·19
29 14	0	07·40	0	384·5				38	11·57	38	481·8				25	18·11
			1	386·2	1	336·6				39	494·0	39	348·3		30	18·57
	2	08·73	2	387·6				40	08·56	40	495·3				35	16·52
	3	07·92	3	385·9						41	490·6				40	19·86
			4	382·6	4	397·4				42	494·1	42	358·4		45	20·94
	5	09·51	5	393·3				43	05·77	43	485·2				50	18·63
			6	402·6	6	362·3				44	487·6	44	369·1		55	18·20
	7	15·83	7	416·4				45	04·78	46	497·8			29 20	0	22·42
	8	17·49	8	409·3						47	500·9	48	368·4		5	22·00
			9	410·7	9	357·0				49	507·8				10	24·55
	10	20·74	10	415·2				50	03·23	51	511·0				15	24·20
			11	413·5	11	342·2				52	510·2	53	367·9		20	23·24
	12	21·03	12	410·3						54	513·9				25	22·31
	13	21·12	13	407·9				55	03·48	57	513·5	58	373·2		30	20·82
			14	408·3	14	310·6	29 16*	0	03·50	2	506·5	3	379·4		35	19·24
	15	20·25	15	403·4				5	02·30	7	505·3	8	401·2		40	19·93
			16	403·3	16	307·6		10	02·57	12	511·9	13	432·9		45	18·05
	17	21·23	17	400·3				15	02·89	17	519·4	18	463·6		50	17·65
	18	21·29	18	400·0				20	04·37	22	515·6	23	486·2		55	21·03
			19	402·1	19	318·9		25	05·40	27	515·1	28	502·0	29 21	0	22·78
	20	21·86	20	404·7				30	07·20	32	514·3	33	513·6		5	23·34
			21	411·0	21	339·7		35	08·79	37	513·2	38	527·0		10	23·78
	22	23·29	22	417·8				40	10·06	42	513·7	43	537·8		15	22·89
	23	22·85	23	419·9				45	10·85	47	514·3	48	544·4		20	23·65
			24	423·0	24	367·3		50	12·45	52	509·9	53	549·3		25	26·70

BIFILAR. $k = 0{\cdot}000140$. BALANCE. $k = 0{\cdot}0000085$.

March 29^d 13^h 38^m—14^h 20^m. The declination magnet vibrating 3′—5′, and the bifilar 8—15 divisions.
March 29^d 15^h 0^m—25^m. Declination magnet vibrating 4′; 20^m—40^m, bifilar vibrating 8—20 divisions.
* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
57	511·4	58	553·0	29 21	30	25 28·90	32	482·3	33	663·9	30 1	26	25 33·90	27	510·4	28	795·4
2	515·8	3	552·3		35	30·81						29	35·33	29	508·9		
32	532·4	33	527·1		36	31·38	37	472·7	38	669·0		30	35·87	30	504·2		
37	525·1	38	522·4				39	480·8				31	34·35	31	506·2		
42	512·1	43	520·1		40	31·21						32	33·33	32	506·0		
47	490·6	48	511·0		41	31·18	42	474·9	43	676·0				33	501·8	33	802·6
52	476·5	53	487·7				44	470·8				34	35·09	34	499·8		
57	467·5	58	455·3		45	33·20						35	35·62	35	500·1		
2	427·5	3	397·7		46	32·94	47	471·9	48	676·9				36	498·1	36	809·6
6	423·6						49	474·0				37	34·75	37	493·0		
7	425·0	8	378·6		50	32·22	52	477·0	53	671·6				38	496·5	38	814·7
11	441·8				55	29·81	57	482·4	58	668·7		39	34·32	39	498·7		
12	445·5			29 22	0	28·55	2	488·7	3	671·8		40	34·37	40	499·7		
13	452·9	14	401·5		5	28·77	7	491·4	8	671·4				41	494·6		
16	465·5				10	29·07	12	492·2	13	672·7		42	31·75	42	494·0		
17	478·1	18	462·4		15	28·58								43	501·2	43	807·8
19	479·5				20	27·01	22	489·3	23	679·6				44	502·6		
21	490·7				25	26·77	27	490·5	28	683·7		45	30·51	45	497·3		
22	493·1	23	467·4	29 23	0	26·63	2	493·9	3	702·5				46	505·5		
24	496·3				10	26·77	12	498·7	13	706·6		47	31·32	47	510·6		
26	498·1				20	28·45	22	483·5	23	722·5				48	522·0	48	846·6
27	500·4	28	460·3		25	27·61	27	486·7	28	730·9				49	517·0		
29	502·1				30	29·66	32	486·4	33	746·1		50	31·43	50	523·8		
31	500·1				31	30·78	34	484·5						51	523·6	51	854·8
32	501·7	33	402·1		35	26·87						52	29·59	52	521·9		
34	502·7				36	25·44	37	491·0	38	764·2				53	521·2	53	859·4
37	507·3	38	401·7				39	499·2				55	27·51	55	523·8		
42	512·0	43	396·9		40	23·38	42	504·5	43	770·5		57	26·94	58	517·7	58	864·1
47	511·4	48	406·0		45	22·22	47	511·4	48	779·2	30 2	0	25·51	0	516·3		
52	512·0	53	389·9		50	24·64	52	510·9	53	791·0				3	520·7	3	857·8
57	504·0	58	394·1		55	27·10	57	507·4	58	801·8		5	24·82	5	525·8		
2	504·6	3	418·5	30 0	0	28·82	2	500·7	3	808·4				8	520·2	8	858·2
7	516·4	8	386·8		5	28·77	7	502·6	8	814·0		10	25·93	10	537·1		
12	521·0	13	454·7		10	28·09	12	492·8	13	827·5		11	24·28	11	525·0		
17	515·0	18	482·3		15	29·06	17	494·0	18	826·9				12	523·6		
22	521·8	23	497·3		20	28·08	22	502·0	23	823·4				13	535·6	13	853·7
27	523·4	28	513·8		25	28·72	27	491·1	28	820·7		14	25·54	14	537·3		
32	516·8	33	527·4		30	28·08	32	485·4	33	817·7		15	25·53	15	531·9		
37	522·6	38	533·8		35	27·82	37	480·8	38	807·7				16	527·4	16	855·5
42	517·2	43	545·4		40	26·34	42	506·7	43	793·2				17	525·4	18	858·0
47	511·4	48	552·0		45	29·46	47	523·5	48	788·4				19	528·2		
52	501·7	53	558·3		46	29·77	49	526·2				20	26·77	20	526·7		
57	504·5	58	567·3		50	30·89								21	525·1		
2	498·1	3	575·0		51	32·02	52	523·4	53	790·9				22	522·1		
7	501·8	8	584·4				54	533·2						23	518·4	23	851·7
12	498·3	13	596·4		55	31·43								24	517·6		
17	496·7	18	601·1		56	32·89	57	512·5	58	797·5		25	25·53	25	516·1		
22	503·5	23	602·7				59	503·7						26	522·6		
27	496·6	28	609·0	30 1	0	30·69	2	503·9	3	799·1				27	530·0		
32	497·9	33	613·4		5	30·10	7	498·0	8	799·1				28	529·6	28	836·3
37	495·0	38	621·8				9	494·5						29	531·0		
42	492·6	43	627·3		10	31·53						30	27·14	31	530·3		
47	485·8	48	631·6		11	32·26	12	500·5	13	798·4		32	26·23	32	532·1	33	839·5
52	490·9	53	639·9		14	33·36						35	25·98	37	528·7	38	837·5
57	486·5	58	645·3		15	32·00								39	532·4		
2	490·5	3	646·8		16	32·12	17	511·1	18	790·7		40	26·90	42	529·8	43	836·1
7	490·9				19	34·61						45	26·21	47	526·9	48	829·5
12	491·9	13	649·8		20	35·63						50	25·87	52	519·3	53	824·3
17	487·0	18	650·6		21	35·92	22	519·5	23	790·5		55	26·45	57	516·7	58	815·6
22	487·3	23	652·2		24	36·91					30 3	0	28·18	2	514·3	3	809·1
27	488·4	28	656·3		25	34·27						5	31·03	7	517·0	8	808·6

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

March 29ᵈ 21ʰ 35ᵐ. The vibrations of the bifilar seem to be suddenly checked occasionally.

March 30ᵈ 1ʰ 25ᵐ—30ᵐ. Declination magnet vibrating 3′—4′; 30ᵐ—50ᵐ, bifilar vibrating 8—12 divisions. 2ʰ 8ᵐ—3ʰ 40ᵐ. Declination vibrating 3′—5′, and bifilar 8—15 divisions.

Gött. Mean Time. d.	h.	Declination. Min.	°	′	Bifilar Corrected. Min.	Sc. Div.	Balance Corrected. Min.	Mic. Div.
30	3	10	25	33·23	12	507·4	13	813·4
					14	505·7		
		15		31·11	16	499·8		
					17	495·4	18	821·9
		20		30·85	19	492·7		
		21		29·50	22	478·2	23	840·1
					24	477·6		
		25		22·42				
		26		21·06	27	490·3	28	848·8
					29	501·9		
		30		17·02				
		31		16·15	32	505·4	33	861·9
					34	516·3		
		35		08·75				
		36		07·29	37	534·3	38	866·0
					39	550·0		
		40		06·37				
		41		06·56	42	552·3	43	858·6
					44	550·5		
		45		11·72				
		46		11·84	47	550·5	48	848·4
					49	549·6		
		50		14·98	52	549·1	53	844·0
		55		15·91	57	537·5	58	836·8
30	4	0		16·97	2	531·7	3	825·7
		5		19·29	7	529·6	8	819·4
		10		20·22	12	525·8	13	813·2
		15		20·55	17	518·7	18	804·5
		20		22·72	22	521·7	23	792·2
		25		23·05	27	521·3	28	782·6
		30		24·35	32	520·3	33	773·7
		40		24·19	42	513·9	43	760·3
		50		25·40	52	519·7	53	750·0
30	5	0		24·66	2	517·9	3	756·8
		15		26·01	17	530·6	18	759·1
		20		26·20	22	536·5	23	767·1
		25		24·59	27	533·6	28	776·8
		30		24·55	32	526·7	33	793·9
		35		23·73	37	514·0	38	809·0
		40		19·86	42	507·3	43	826·0
		45		17·12	47	509·4	48	840·4
		50		09·54				
		51	25	07·00	52	495·5	53	859·6
					54	501·4		
		55	24	57·32				
		56	24	55·20	57	515·0	58	858·8
					59	523·9		
30	6	0	24	51·16				
		1	24	51·05	2	530·1	3	848·3
					4	534·8		
		5	24	52·75	7	542·9	8	843·6
		10	24	55·83	12	549·8	13	842·3
		15	24	59·95	17	544·4	18	843·4
		20	25	00·98	22	539·4	23	840·1
		25	25	02·50	27	537·5	28	836·2
		30	25	02·15	32	527·0	33	832·9
		35	24	58·13	37	534·8	38	823·0
		40	24	58·80	42	537·9	43	819·4
		45	25	01·11	47	533·9	48	816·7
		50		02·99	52	523·4	53	816·9
		55		02·93	57	522·5	58	814·1

Gött. Mean Time. d.	h.	Declination. Min.	°	′	Bifilar Corrected. Min.	Sc. Div.	Balance Corrected. Min.	Mic. Div.
30	7	0	25	02·55	2	523·0	3	813·2
		5		04·14	7	526·9	8	809·8
		10		07·27	12	519·7	13	813·3
		15		07·31	17	517·5		
		20		07·40	22	517·1	23	809·3
		25		07·31	27	518·0	28	805·6
		30		08·25	32	516·5	33	805·0
		50		13·63	52	515·7	53	790·9
		55		14·80				
		56		15·14	57	555·9	58	755·9
					59	563·6		
30	8	0		29·93				
		1		31·79	2	545·6	3	723·8
					4	524·9		
		5		32·46				
		6		30·24	7	494·9	8	707·9
					9	501·0		
		10		12·83				
		11		12·33	12	523·4	13	656·3
					14	535·3		
		15		18·20				
		16		20·96	17	538·7	18	636·7
					19	538·4		
		20		26·45				
		21		27·26	22	527·1	23	638·8
					24	521·5		
		25		29·34	27	496·7	28	634·2
		30		17·80	30	468·5		
		31	25	08·41	31	469·2		
					32	474·9		
		33	24	55·49	33	483·8	33	665·6
		34		50·93	34	494·1		
		35		48·97	35	505·6	35	661·2
		36		47·84	36	516·6	36	655·7
		37		47·51	37	525·8	37	651·0
		38		48·28	38	531·9	38	646·5
		39		49·41	39	536·1	39	644·1
		40		50·93	40	540·1	40	643·1
		41		52·67	41	543·0	41	642·7
		42		54·39	42	545·5	42	644·6
		43		55·84	43	547·0	43	644·4
		44		56·87	44	547·8		
		45		57·96	45	547·3	45	644·5
		46		58·96	46	545·3		
		47		59·32				
		48	24	59·88	48	541·2	48	651·8
		49	25	00·18				
		50		00·37			50	653·0
		51		00·84	52	535·5	53	655·5
		55		03·13	57	534·3	58	660·0
		59		05·13				
30	9				2	532·9	3	660·1
		5		10·67	7	526·1		
		10		12·45	12	506·0	13	671·0
					14	503·8		
		15		08·58	17	506·0	18	674·8
		20		05·82	22	507·4	23	675·1
		25		04·64	27	510·8	28	676·3
		30		04·34	32	511·7	33	673·2
		35		05·74	37	517·9	38	666·1
		40		07·78	42	521·3	43	664·9

Gött. Mean Time. d.	h.	Declination. Min.	°	′
30	9	45	25	11·61
		50		12·48
		55		00·57
30	10	0		12·82
		5		12·25
		10		10·33
		15		11·77
		20		18·18
		25		26·68
		30		28·76
		35		26·54
		40		24·46
		45		22·22
		50		20·82
		55		20·82
30	11	0		20·16
		5		19·49
		10		20·15
		20		18·95
		25		16·36
		30		14·91
		35		15·59
		50		16·10
		55		14·80
30	12	0		14·87
		5		16·15
		10		17·13
		20		17·89
		35		17·73
30	21	50	25	19·64
30	23	30	25	23·81
31	2	5	25	24·48
		55		23·41
31	13	0	25	21·88
		5		20·25
		10		19·49
		15		19·02
		25		18·90
		35		17·63
		40		16·63
31	14	0		17·98
		25		17·00
31	15	0		16·75
		35		16·46
31	16	0		16·26
		35		17·60
31	17	0		17·54
		55		22·33
31	18	0		22·87
		5		23·22
		10		23·48
		15		23·88
		20		23·24
		25		22·62
		30		22·74
		35		22·58
31	19	0		19·55

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

March 30ᵈ 5ʰ 54ᵐ. The vibrations of the bifilar seem to be sometimes suddenly checked.

March 30ᵈ 8ʰ 30ᵐ—37ᵐ. The declination has been steadily diminishing. 8ʰ 41ᵐ. The bifilar readings have been steadily increasing since 30ᵐ, never having gone back a tenth of a division; the bifilar attained its maximum about 44½ᵐ.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
47	514·3	48	664·5	31	19	5	25	20·53	7	523·8	8	669·7	1	9	45	25	22·08	47	524·5	48	673·3
52	510·4	53	664·5			10		19·73	12	521·0	13	672·6			50		20·43	52	522 6	53	675·2
57	509·1	58	665·0			15		18·50	17	519·4	18	676·3			55		20·82	57	516·2	58	683·0
2	507·5	3	664·2			20		18·84	22	517·6	23	682·0	1	10	0		19·55	2	501·0	3	692·9
7	508·7	8	658·2			25		21·32	27	515·5	28	687·1			5		14·03	7	502·9	8	701·7
12	530·3	13	644·3			30		20·80	32	512·2	33	690·9			10		09·06	12	512·4	13	705·8
17	538·8	18	630·3			35		18·90	37	513·3	38	693·8			15		08·16	17	515·7	18	706·5
22	536·1	23	619·5			40		18·30	42	513·3	43	695·6			20		08·14	22	517·9	23	707·8
27	522·0	28	614·5			45		18·65	47	512·6	48	699·4			25		09·46	27	518·9	28	710·6
32	510·2	33	603·7	31	20	0		17·10	2	514·6	3	706·3			30		11·48	32	518·7		
37	506·1	38	589·6												40		14·10	42	512·1	43	709·0
42	507·2	43	581·2	1	3	0	25	17·81	2	511·5	3	788·0	1	11	0		12·67	2	516·0	3	710·7
47	507·1	48	575·9			35		19·48	37	523·7	38	792·0			20		11·61	22	519·5	23	717·8
52	509·2	53	575·1	1	4	0		21·81	2	516·8	3	785·4			30		12·72	32	518·8	33	717·9
57	516·1	58	576·2			30		22·28	32	524·9	33	766·6			40		13·91	42	513·7	43	713·5
2	518·3	3	576·0			35		21·39	37	520·1	38	766·8	1	12	0		15·76	2	514·6	3	710·6
7	523·2	8	581·8			40		20·85	42	521·9	43	767·5			45		19·64	47	519·4	48	671·5
12	522·8	13	586·1			55		17·40	57	516·5	58	777·1	1	13	0		18·84	2	520·4	3	671·9
22	518·3	23	604·6	1	5	0		15·04	2	516·1	3	780·3	1	14	0		17·20	2	516·2	3	673·0
27	522·6	28	609·4			5		13·09	7	521·4	8	782·8	1	15	0		21·50	2	507·5	3	594·9
32	527·5	33	615·0			10		12·26	12	527·0	13	785·8			10		17·09	12	508·9	13	591·4
37	528·2	38	622·5			15		12·70	17	528·4	18	790·7			15		16·72	17	510·6	18	598·7
52	518·9	53	640·5			25		11·35	27	523·8	28	799·3			20		15·44	22	511·4	23	608·5
57	521·0	58	644·3			30		11·37	32	523·4	33	800·9			25		14·01	27	512·4	28	611·2
2	520·8	3	651·6			40		09·37	42	535·0	43	798·7			30		14·15	32	511·2	33	621·4
7	520·1	8	656·4			45		11·12	47	532·2	48	804·1			35		13·19	37	511·7	38	630·3
12	518·7	13	660·7			50		11·49	52	530·1	53	808·0			40		12·78	42	512·9	43	640·8
22	518·2	23	668·2			55		11·24	57	529·7					45		12·80	47	514·9	48	644·6
37	518·6	38	679·3	1	6	0		12·87	2	529·6	3	810·9			50		13·43	52	515·0	53	646·4
						10		14·13	12	526·6	13	815·0			55		12·98	57	515·6		
52	505·0	53	717·8			20		17·36	22	525·0	23	816·8	1	16	0		13·46	2	516·5	3	649·9
						25		16·79	27	522·2	28	813·8			30		15·98	32	517·0	33	661·0
32	498·9	33	756·3			30		16·79	32	523·3			1	17	0		16·39	2	514·5	3	663·7
						40		16·72	42	514·2	43	813·9	1	20	0		18·23	2	508·8	3	697·9
7	511·5	8	748·0			45		16·01	47	517·7	48	811·0			20		18·87	22	508·2	23	701·8
57	516·0	58	742·8			50		16·66	52	518·6			1	21	0		20·11	2	507·6	3	706·5
				1	7	0		16·35	2	520·9	3	805·9	1	22	0		21·23	2	494·6	3	726·8
2	514·6	3	609·9			15		18·10	17	521·3	18	802·7			15		22·20	17	495·3	18	729·4
7	519·4	8	617·0			55		18·16	57	523·7					31		22·15	32	500·9	33	724·6
12	522·9	13	624·6	1	8	0		19·19	2	526·2	3	781·5			45		22·58	47	501·4	48	724·9
17	523·1	18	631·2			10		17·56	12	527·6	13	779·7	1	23	0		23·76	2	500·8	3	724·1
27	519·9	28	644·6			15		18·84	17	525·9	18	778·6	2	0	0		24·84	2	506·9	3	725·5
37	515·5	38	657·2			20		16·72	22	524·4			2	1	0		25·58	2	513·7	3	728·9
42	516·3	43	663·9			25		15·71	27	521·8	28	777·2			16		27·07	17	518·8	18	732·2
2	515·9	3	684·3			30		14·20	32	520·1			2	2	0		26·35	2	519·7	3	738·0
27	516·2	28	705·9			35		12·55					2	3	0		27·44	2	530·2	3	750·7
2	516·1	3	719·4			40		12·65	42	521·2	43	779·0			15		27·28	17	521·7	18	758·2
37	516·7	38	727·1			45		13·52	47	518·2	48	780·7	2	4	0		23·43	2	518·4	3	767·9
2	514·7	3	724·4			50		12·85	52	514·6	53	781·7	2	6	0		18·85	2	503·8	3	824·7
37	512·5	38	729·0			55		12·42	57	516·0					10		12·87	12	507·1	13	827·8
2	514·5	3	716·8	1	9	0		12·92	2	514·1	3	782·0			15		11·48	17	513·8	18	825·8
57	501·5	58	679·6			15		19·39	17	532·6	18	740·8			20		09·40	22	519·9	23	823·1
2	503·3	3	675·1			19		15·45							25		07·98	27	534·8	28	819·1
7	506·2	8	670·0			20		12·51							30		09·20	32	539·6	33	819·2
12	506·5	13	667·4			21		10·27	22	536·9	23	711·7			35		10·51	37	537·9	38	819·8
17	510·5	18	665·1			25		11·64							40		12·11	42	534·9	43	815·9
22	512·0	23	664·6			26		12·72	27	548·4	28	691·1			45		13·90	47	530·4	48	813·0
27	513·1	28	665·7						29	546·6					50		15·81	52	527·7	53	806·7
32	513·9	33	666·1			30		17·04	32	540·7	33	680·0			55		17·27	57	525·4	58	801·9
37	514·3	38	666·3			35		20·69	37	529·8	38	675·5	2	7	0		18·25	2	526·4	3	796·4
2	524·5	3	666·4			40		23·34	42	522·4	43	673·5			5		19·51	7	523·6	8	789·5

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

April 1d 9h 20m. The declination magnet vibrating 5′ – 6′.

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
2 7	10	25 19·88	12	524·9	13	786·1
2 8	0	16·08	2	520·7	3	792·7
	10	12·58	12	517·4	13	790·2
	20	07·02	22	519·0	23	785·0
	25	06·83	27	521·5	28	781·6
	30	09·20	32	517·6	33	782·5
	40	11·95	42	512·8	43	784·3
	50	15·47	52	510·8		
	55	18·50				
	56	24·39	57	520·1	58	766·6
			59	516·2		
2 9	0	29·68				
	1	29·97	2	515·6	3	742·9
			4	516·7		
	5	26·81				
	6	26·82	7	519·4	8	712·8
			9	518·3		
	10	26·92	12	515·6	13	690·0
	15	26·14	17	514·0	18	687·1
	20	22·84	22	509·5	23	682·5
	25	18·77	27	517·2	28	703·5
	30	16·08	32	521·2	33	713·4
	35	15·71	37	521·6	38	720·9
	40	15·29	42	521·6	43	727·1
	45	15·45	47	518·4	48	731·4
	50	14·21	52	518·4	53	735·7
	55	13·43	57	521·9	58	735·7
2 10	0	13·96	2	523·3	3	743·9
	10	16·08	12	522·3	13	748·1
	20	16·82	25	520·7	27	751·4
	40	17·70	42	520·4	43	753·5
2 11	0	16·35	2	524·0	3	747·5
	15	16·48	17	520·5	18	745·5
2 12	0	18·40	2	520·9	3	744·7
2 16	0	21·29	2	509·5	3	728·1
	5	21·97	7	511·2	8	725·2
	15	22·89	17	514·4	18	711·2
	20	23·16	22	515·0	23	706·3
	25	23·29				
	40	21·19	42	512·9	43	682·1
	45	19·71	47	513·9	48	681·4
	55	18·45	57	515·6	58	681·2
2 17	0	17·85	2	519·7	3	680·1
	5	17·76	7	520·8	8	682·9
	10	18·00				
	55	11·88	57	516·0	58	698·8
2 18	0	12·38	2	515·3	3	702·5
	5	13·12	7	513·3	8	706·7
	10	14·28	12	513·0	13	709·1
	15	15·05	17	513·1	18	711·7
	20	15·54				
2 19	0	14·85	2	517·5	3	721·3
2 21	0	19·88	2	492·1	3	746·7
	10	22·20	12	487·9	13	750·3
	15	23·61	17	483·7	18	755·6
	20	24·55	22	480·5	23	755·9
	25	22·10	27	487·6	28	752·9
	30	22·00	32	494·1	33	748·5
	35	23·14	37	496·9	38	746·6
	45	25·83	47	491·5	48	746·2
2 22	0	27·05	2	490·8	3	746·2

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
2 22	15	25 26·50	17	488·3	18	749·2
	25	27·75	27	491·1	28	749·3
	40	24·13	42	501·6	43	740·9
	50	26·37	52	498·7	53	743·5
2 23	0	24·13	2	503·9	3	743·0
	20	23·99	22	515·1	23	746·0
3 0	0	20·94	2	520·1	3	738·7
3 5	0	25 23·51	2	527·6	3	827·7
	5	24·35	7	526·7	8	832·9
	10	25·44	12	525·4	13	843·2
	15	23·72	17	525·7	18	857·1
	20	22·22	22	517·8	23	874·9
	25	16·99	27	521·4	28	873·9
	30	18·01	32	523·8	33	870·3
	35	17·94	37	518·2	38	873·7
	40	15·78	42	519·5	43	875·7
	45	16·72	47	527·1	48	888·5
	50	04·64	52	544·6	53	909·2
	51	25 02·77	54	554·8		
	55	24 58·74				
	56	25 00·08	57	568·6	58	864·5
3 6	0	12·35	0	559·1		
	1	13·76	1	554·2		
			2	550·4	3	851·1
	5	17·02	7	537·5	8	846·9
	10	20·16	12	525·1	13	847·8
	15	21·26	17	517·0	18	850·5
	20	20·25	22	508·0	23	861·5
	25	12·33	27	520·3	28	855·5
	30	10·38	32	530·0	33	849·9
	35	11·71	37	520·9	38	857·1
	40	25 05·43				
	42	24 58·36	42	519·6		
			43	527·5	43	856·2
	44	24 57·64	44	535·5		
	45	24 58·15	45	542·7		
	46	25 00·06	46	547·9		
	47	02·45			47	836·5
	48	05·38	48	551·6		
	49	07·40	49	555·6		
	50	09·73	50	552·5		
			51	549·7	51	829·8
	52	12·06	52	546·8		
			53	542·2	53	826·3
			54	538·1		
	55	13·23	55	535·7		
			56	533·2		
			57	530·4	58	820·9
3 7	0	13·66	2	511·4	3	818·6
	5	06·90	7	514·4	8	809·9
	10	03·16	12	524·5	13	799·1
	15	04·15	17	523·5	18	796·5
	20	03·55	22	523·7	23	792·6
	25	04·41				
	30	05·38	32	527·4	33	791·6
	35	09·15	37	521·9	38	793·5
	40	11·17	42	514·6	43	794·3
	45	11·37	47	515·1	48	792·7
	50	12·48	52	514·2	53	791·5
	55	13·72	57	512·1	58	788·8

Gött. Mean Time.	Declination.	
d. h.	Min.	° ′
3 8	0	25 14·23
	5	16·82
	10	18·03
	15	18·20
	30	18·81
3 9	0	17·53
3 12	0	13·63
	15	16·75
	25	18·16
	35	18·97
	45	19·78
3 13	0	17·63
3 15	0	21·06
	20	20·42
3 16	0	24·25
	5	24·26
	10	23·12
	15	22·08
	30	18·85
	35	18·27
	45	15·91
3 17	0	13·94
	25	14·11
3 18	0	14·46
4 7	0	25 17·63
	15	09·47
	20	10·68
	30	11·17
4 8	0	14·60
4 10	0	15·34
	10	18·21
	20	15·61
4 11	0	14·13
	30	15·69
4 12	0	14·58
4 16	0	11·39
	10	11·30
	20	11·77
4 17	0	12·92
5 12*	0	25 13·16
	5	10·03
	10	08·88
	15	09·35
	20	08·01
	25	06·83
	30	07·35
	35	08·01
	40	13·56
	45	30·60
	46	32·32
	50	37·17
	51	37·91
	55	36·09
	56	35·45

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

April 2ᵈ 8ʰ 55ᵐ. The declination magnet vibrating 12′, and the bifilar 30 divisions.

April 5ᵈ 12ʰ 40ᵐ. The declination magnet vibrating 4′, and the bifilar 10 divisions. 12ʰ 45ᵐ. The declination steadily increasing, the bifilar being very steady.

* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers*.

Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.
2	515·3	3	784·0
7	514·1	8	782·0
12	513·2	13	778·2
17	511·6	18	780·2
32	517·5	33	768·1
2	519·3	3	757·1
2	513·0	3	713·7
17	513·1	18	718·4
27	514·3	28	716·5
37	519·9	38	714·1
47	519·8	48	713·1
2	517·7	3	713·5
2	514·1	3	716·3
22	516·5	23	696·5
2	510·6	3	676·2
7	512·4	8	670·3
12	513·7	13	663·1
17	513·6	18	657·7
32	512·8	33	656·0
37	513·7		
47	516·6	48	658·9
2	517·0	3	665·2
27	518·7	28	677·6
2	518·1	3	691·8
2	517·0	3	776·8
17	529·5	18	775·7
22	529·3	23	779·5
32	527·2		
2	524·2	3	773·5
2	524·7	3	757·7
12	519·0	13	756·2
22	519·2	23	754·0
2	522·4	3	746·5
32	525·5	33	731·8
2	524·5	3	718·0
2	517·9	3	721·5
12	517·8		
22	517·2		
2	520·5	3	725·5
2	528·2	3	747·5
7	533·6	8	742·9
12	532·5	13	739·3
17	529·7	18	737·5
22	526·8	23	734·9
27	520·0	28	736·3
32	513·8	33	738·9
37	509·1	38	738·6
42	523·0	43	734·8
44	522·9		
47	521·1	48	703·6
49	522·6		
52	518·2	53	657·0
54	515·6		
57	515·1	58	614·0
59	517·5		

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
5	13	0	25	34·12				
	*	1		34·01	2	517·2	3	583·9
		5		32·24	7	513·2	8	556·1
		10		31·19	12	509·3	13	549·4
		15		28·92	17	508·0	18	555·6
		20		26·01	22	515·7	23	572·8
		25		23·63	27	513·2	28	589·4
		30		19·71	32	513·8	33	604·3
		35		16·84	37	513·2	38	613·5
	*	40		14·75	42	513·7	43	624·3
		45		12·78	47	515·3	48	637·9
		50		10·20	52	520·3	53	651·3
		55		09·13	57	524·9	58	661·0
5	14	0		10·28	2	525·0	3	667·4
		5		10·60	7	526·3	8	672·9
		10		11·77	12	527·1	13	672·7
					37	521·0	38	663·6
		40		10·85	42	519·9	43	658·5
		45		09·87	47	518·9	48	657·2
		50		09·44	52	517·7	53	654·3
		55		09·02	57	519·6	58	649·8
5	15	0		10·07	2	518·0	3	646·9
		5		10·81	7	516·0	8	640·6
		10		11·46	12	516·4	13	634·6
		15		11·46	17	513·8	18	624·8
		20		10·48	22	511·8	23	612·3
		25		09·03	27	510·4	28	603·7
		30		07·20	32	513·7	33	599·2
		35		05·38	37	511·9	38	597·6
		40		03·60	42	507·2	43	598·3
		45		04·15	47	511·8	48	595·6
		50		05·40	52	499·8	53	590·6
		55		07·94	57	496·4	58	585·4
5	16	0		10·60	2	499·5	3	580·3
		5		13·43	7	503·3	8	573·4
		10		13·47	12	511·4	13	572·7
		15		11·61	17	515·3	18	572·8
		20		11·69				
5	17	0		04·91	2	519·7	3	578·0
		5		03·34	7	519·0	8	586·1
		10		02·01	12	517·4	13	594·1
		15		01·99	17	516·6	18	600·9
		20		02·45	22	512·1	23	604·5
		25		03·47	27	510·4	28	624·2
		30		04·48	32	508·7	33	635·0
		35		07·84	37	505·2	38	642·1
		40		10·41	42	502·5	43	646·7
		45		12·04	47	501·3	48	649·6
		50		12·33	52	504·0	53	663·0
		55		12·92	57	505·2	58	656·5
5	18	0		14·13	2	507·0	3	661·3
		5		16·18	7	510·0	8	665·5
		15		16·72	17	513·1	18	674·1
5	19	0		15·74	2	514·9	3	705·9
6	10	0	25	16·12	2	530·0	3	710·2
		5		13·59	7	533·6	8	706·9
		10		14·40	12	533·1	13	703·8
		15		14·84	17	530·9	18	705·5
		20		14·73	22	529·1	23	705·5
6	11	0		16·55	2	526·6	3	707·3

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
8	8	0	25	13·46	2	525·9	3	744·7
		10		11·77	12	529·3	13	747·3
		15		11·66	17	531·3	18	751·3
		20		12·13	22	531·2		
		30		13·54	32	527·3	33	750·5
8	9	0		15·07	2	526·0	3	751·1
8	10	0		13·59	2	524·0	3	749·0
		20		15·45	22	525·8	23	740·6
8	11	0		16·28	2	522·2	3	744·7
9	2	0	25	24·10	2	518·1	3	725·7
		5		20·83	7	523·6	8	728·8
		10		19·93	12	523·9	13	728·2
		15		19·01	17	524·2	18	728·8
		20		18·30				
9	3	0		22·87	2	518·3	3	731·1
10	13	0	25	08·63	2	526·9	3	703·2
		5		08·41	7	525·1	8	705·3
		10		08·45	12	524·0	13	707·7
		15		09·29	17	521·6	18	700·8
		20		09·79	22	520·6	23	704·3
		25		10·23	27	519·7	28	714·4
		30		10·78	32	520·6	33	716·6
		35		11·77	37	521·3	38	718·3
		40		12·46	42	521·3	43	718·3
		45		12·73	47	521·3		
		50		13·44	52	521·1	53	724·8
		55		13·97	57	521·1	58	725·8
10	14	0		14·73	2	520·3	3	726·9
		10		15·31	12	522·9	13	725·6
		30		14·73	32	521·5	33	729·0
10	15	0		15·32	2	522·9	3	731·8
14	17	0	25	18·28	2	526·0	3	716·8
		10		20·42	12	528·7	13	713·7
		15		20·63	17	528·4	18	711·4
		20		19·79	22	530·8	23	709·1
		35		18·90	37	531·8	38	706·4
		40		18·23				
14	18	0		17·47	2	531·3	3	705·9
15	8	0	25	14·70	2	529·1	3	745·0
		10		14·67	12	524·0	13	747·2
		15		14·26	17	523·8	18	747·1
15	9	0		13·81	2	538·5	3	733·2
		5		10·77	7	544·1	8	725·9
		10		12·13	12	544·5	13	724·8
		15		12·78	17	536·9	18	724·2
		25		12·18	27	534·5		
		40		15·22	42	522·7	43	729·5
					47	518·6		
		50		15·34	52	518·9	53	731·8
15	10	0		15·47	2	517·4	3	733·8
		30		14·55	32	525·0	33	731·3
15	11	0		14·75	2	523·6	3	728·4
16	13	$0\frac{3}{4}$	25	10·20	$2\frac{3}{4}$	516·9	$3\frac{3}{4}$	725·5
		$5\frac{3}{4}$		11·64	$7\frac{3}{4}$	518·0	$8\frac{3}{4}$	725·0
		$10\frac{3}{4}$		13·67	$12\frac{3}{4}$	517·8	$13\frac{3}{4}$	720·9
		$15\frac{3}{4}$		14·89	$17\frac{3}{4}$	519·1	$18\frac{3}{4}$	715·1

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

April 6^d 0^h. Clock $3\frac{1}{2}^s$ fast.

* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
16 13	20¾	25 15·41	22¾	521·3	23¾	709·3
	25¾	15·49	27¾	522·4	28¾	705·3
	30¾	15·59	32¾	523·5	33¾	698·9
	35¾	15·47	37¾	526·0	38¾	692·8
	40¾	15·67	42¾	526·9	43¾	682·1
	45¾	15·41	47¾	525·2	48¾	673·4
	50¾	14·13	52¾	525·1	53¾	666·8
	55¾	13·94	57¾	525·5	58¾	659·3
16 14	0¾	12·65	2¾	522·3	3¾	653·0
	5¾	11·68	7¾	522·0	8¾	648·4
	10¾	11·17	12¾	522·8	13¾	642·6
	15¾	10·60	17¾	521·7	18¾	637·8
	20¾	10·40	22¾	519·9	23¾	630·2
	25¾	09·42	27¾	514·9	28¾	627·7
	30¾	06·93	32¾	516·7	33¾	627·1
	35¾	06·98	37¾	515·6		
	40¾	05·58	42¾	517·0	43¾	626·1
	45¾	05·22	47¾	517·3	48¾	626·0
	50¾	04·75	52¾	516·9	53¾	628·2
	55¾	05·67	57¾	515·4	58¾	633·5
16 15	0¾	06·54	2¾	517·5	3¾	635·1
	5¾	07·42	7¾	519·2	8¾	638·5
	10¾	08·48	12¾	519·7	13¾	640·2
	15¾	08·31	17¾	520·4	18¾	640·9
	20¾	08·52	22¾	520·5		
	25¾	07·72	27¾	520·7	28¾	642·0
	30¾	07·18	32¾	521·3		
	35¾	06·59	37¾	522·8	38¾	642·2
	40¾	07·60	42¾	521·7	43¾	643·9
16 16	0¾	07·08	2¾	522·8	3¾	659·3
	15¾	08·18	17¾	525·2	18¾	665·7
	30¾	08·08	32¾	524·7	33¾	668·5
	45¾	09·42	47¾	521·0	48¾	672·9
16 17	0¾	12·11	2¾	524·8	3¾	670·7
16 18	0¾	22·22	2¾	549·2	3¾	554·5
	5¾	22·40	7¾	550·2	8¾	554·3
	10¾	21·76	12¾	549·5		
	15¾	22·03	17¾	544·7	18¾	556·0
	20¾	20·03	22¾	542·5		
	25¾	18·87	27¾	538·8	28¾	559·8
	30¾	18·11	32¾	535·5	33¾	564·4
	35¾	18·58	37¾	533·2		
	40¾	19·19	42¾	528·9	43¾	573·9
	45¾	20·49	47¾	527·6	48¾	588·5
	50¾	24·99	52¾	519·9	53¾	595·8
	55¾	25·60	57¾	524·1	58¾	596·6
16 19	0¾	28·35	2¾	520·9	3¾	599·8
	5¾	30·24	7¾	520·1	8¾	601·6
	10¾	30·76	12¾	519·8	13¾	600·1
	15¾	31·97	17¾	521·1		
	20¾	31·28	22¾	524·0	23¾	598·0
	25¾	29·90				
	35¾	28·79	37¾	506·0	38¾	617·4
	40¾	29·73	42¾	498·4	43¾	623·1
	45¾	29·93	47¾	501·0	48¾	625·7
	50¾	29·10	52¾	498·2	53¾	629·0
	55¾	27·29	57¾	496·6		
16 20	0¾	27·58	2¾	490·5	3¾	643·7
	5¾	27·56	7¾	482·1	8¾	649·0
	10¾	27·31	12¾	478·7	13¾	656·4
	15¾	28·18	17¾	475·8	18¾	662·6

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
16 20	20¾	25 27·24	22¾	475·4	23¾	661·8
	25¾	26·30	27¾	476·3	28¾	652·4
	30¾	25·58	32¾	473·9	33¾	665·0
	35¾	25·80	37¾	475·8	38¾	666·4
	40¾	26·94	42¾	479·5	43¾	667·3
	45¾	27·53	47¾	475·2	48¾	671·6
	50¾	29·86	52¾	476·2	53¾	674·2
	55¾	28·60	57¾	466·0	58¾	681·9
16 21	0¾	28·80	2¾	462·2	3¾	688·0
	5¾	23·79	7¾	449·9	8¾	700·6
	10¾	24·72	12¾	447·0	13¾	708·5
	15¾	28·96				
	16¾	30·15	17¾	451·8	18¾	708·0
	20¾	30·91				
	21¾	30·78	22¾	451·9	23¾	698·3
	25¾	29·04	27¾	446·8	28¾	695·7
	30¾	26·30	32¾	445·5	33¾	697·1
	35¾	24·20	37¾	453·2	38¾	702·6
	40¾	26·63	42¾	456·3	43¾	703·8
	45¾	27·49	47¾	458·4	48¾	705·5
	50¾	26·40	52¾	456·4	53¾	708·0
	55¾	26·28	57¾	456·5	58¾	708·7
16 22	0¾	27·55	2¾	457·9	3¾	707·7
	5¾	28·04	7¾	461·8	8¾	708·9
	10¾	27·95	12¾	464·0	13¾	714·0
	15¾	27·04	17¾	468·8	18¾	720·9
	20¾	26·57	22¾	468·2	23¾	726·5
	25¾	26·87	27¾	466·4	28¾	731·2
	30¾	27·41	32¾	462·7	33¾	734·5
	35¾	27·71	37¾	466·0	38¾	735·7
	40¾	28·52	42¾	464·2	43¾	741·0
	45¾	27·31	47¾	467·3	48¾	742·2
			52¾	471·2		
16 23	0¾	29·73	2¾	472·0	3¾	754·9
	5¾	30·51	7¾	466·6	8¾	762·0
	10¾	29·50	12¾	469·9	13¾	765·0
	15¾	29·26	17¾	471·8	18¾	768·8
	20¾	28·96	22¾	468·7	23¾	778·6
	25¾	31·14	27¾	465·7	28¾	790·2
	30¾	32·73	32¾	463·4	33¾	799·0
	35¾	32·35	37¾	466·9	38¾	805·9
	40¾	32·91	42¾	470·0	43¾	815·1
	45¾	31·93	47¾	465·0	48¾	826·7
	50¾	31·93	52¾	473·7	53¾	834·6
	55¾	29·16	57¾	485·8	58¾	833·5
17 0	0¾	27·29	2¾	480·6	3¾	837·7
	5¾	24·53	7¾	476·8	8¾	843·8
	10¾	27·98	12¾	491·5	13¾	844·9
	15¾	27·58	17¾	489·0	18¾	859·2
	20¾	25·78	22¾	486·8	23¾	866·7
	25¾	24·55	27¾	495·9	28¾	863·9
	30¾	24·19	32¾	503·0	33¾	856·1
	35¾	26·84	37¾	506·5	38¾	859·4
	40¾	30·67	42¾	509·2	43¾	872·5
	45¾	33·11	47¾	520·8	48¾	906·0
	50¾	35·63	52¾	527·8	53¾	965·4
	55¾	38·04				
	56¾	39·55	57¾	528·2	58¾	1019·0
	59¾	42·34				
17 1	0¾	43·00				
	1¾	41·37	2¾	559·8	3¾	1082·9

Gött. Mean Time.	Declination.	
d. h.	Min.	° ′
17 1		
	5¾	25 37·20
	10¾	36·70
	15¾	32·39
	20¾	32·51
	25¾	30·32
	30¾	28·79
	35	25·85
	40	23·70
	45	23·38
	50	24·52
	55	25·56
17 2	0	25·56
	5	25·19
	10	26·30
	15	25·81
	20	29·12
	25	29·77
	30	28·22
	35	29·70
	40	28·15
	45	28·42
	50	31·34
	55	30·87
17 3	0	26·72
	5	27·78
	10	22·62
	15	28·83
	20	26·45
	25	27·10
	30	28·35
	35	30·69
	40	30·74
	45	30·58
	50	26·81
	55	28·04
17 4	0	27·61
	5	30·69
	10	25·41
	15	26·75
	20	24·22
	25	27·31
	30	20·36
	35	23·04
	40	25·58
	45	24·35
	50	24·39
	55	25·61
17 5	0	26·16
	5	25·44
	10	25·96
	15	27·41
	20	26·90
	25	24·72
	30	24·84

BIFILAR. k=0·000140. BALANCE. k=0·0000085.

April 17d 1h 31m, Clock 43s slow; set right. The minutes of observation have been given to the nearest quarter since 16d 13h.

BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
4¾	574·5			17 5	35	25 23·78	37	553·0	38	940·5	17 9	0	25 15·65	2	523·7	3	847·1
6¾	587·2	7¾	1141·8		40	21·77	42	555·9	43	941·4		20	08·72	22	531·5	23	829·6
8¾	589·5	9¾	1133·8		45	20·55	47	551·3	48	944·9		30	09·42	32	532·0	33	830·3
11¾	595·1				50	20·65	52	544·6	53	945·2		35	10·06	37	540·3	38	830·1
12¾	598·0	12¾	1138·9		55	10·83	57	582·6	58	926·3		40	12·93	42	524·9	43	827·9
14¾	607·8	13¾	1133·0	17 6	0	19·93	2	593·2	3	931·8		45	13·05	47	512·6	48	822·5
		16¾	1108·8		5	34·44						50	10·83	52	513·9	53	811·0
17¾	599·5	18¾	1084·5		7	35·70	7	564·0				55	08·83	57	521·3	58	804·6
19¾	602·8				8	35·02			8	963·5	17 10	0	07·91	2	515·7	3	797·1
21¾	601·5	22¾	1056·0		10	32·60	12	554·9	13	984·8		5	06·06	7	516·2	8	793·7
23¾	593·3	24¾	1058·9		15	28·22	15	569·4				10	04·86	12	515·9	13	787·2
27¾	580·9	28¾	1051·4				17	571·1	18	975·6		15	03·45	17	518·7	18	779·5
32	568·4	33	1037·9		20	32·13	20	570·8				20	02·62	22	515·5	23	768·7
37	569·1	38	1039·3				21	561·8				25	01·39	27	520·4	28	758·1
42	567·0	43	1024·1				22	551·0	22	972·1		30	00·77	32	527·2	33	750·9
47	552·7	48	998·1		23	34·27	23	541·5				35	02·60	37	520·0	38	746·5
52	550·4	53	974·7				24	539·8	24	971·9		40	04·98	42	516·8	43	743·3
57	553·6	58	957·1		25	28·82	25	541·8				45	06·06	47	513·2	48	737·0
2	546·3	3	948·3				26	547·4				50	05·08	52	520·5	53	733·1
7	554·4	8	935·9		27	23·96	27	562·2			*	55	02·12	57	533·1	58	733·4
12	560·8	13	923·4		28	23·52	28	566·3			17 11	0	04·61	2	530·0	3	727·3
17	566·1	18	918·1				29	580·2	29	980·2		5	06·86	7	520·4	8	728·3
22	568·3	23	916·5		30	26·70	30	577·2				10	06·70	12	514·6	13	734·7
27	552·6	28	921·8				31	573·6	31	983·0		15	05·89	17	514·9	18	739·9
32	561·0	33	916·5		32	29·53	32	572·0				20	06·39	22	515·9	23	742·4
37	554·3	38	924·6		33	32·19	33	568·3				25	07·49	27	513·6	28	746·9
42	561·9	43	932·2				34	558·3	34	983·7				32	519·2	33	754·4
47	564·1	48	937·1		35	34·07	35	549·2				35	08·83	37	513·3	38	755·6
52	566·7	53	943·9				36	545·7	36	985·6		40	07·94	42	517·9	43	755·6
57	564·6	58	951·9		37	31·34	37	546·6				45	08·56	47	516·6	48	755·5
2	562·8	3	945·2		38	30·57	38	547·6			17 12	0	10·38	2	504·1	3	749·8
7	558·2	8	943·0				39	546·8	39	985·3		5	09·30	7	505·3	8	753·6
12	569·6	13	939·4		40	30·24	40	545·2				10	07·44	12	506·2	13	750·9
17	555·3	18	954·4				41	541·2	41	983·4		15	06·50	17	508·2	18	742·7
22	556·6	23	949·7		42	29·81	42	537·1				20	06·03	22	506·6	23	738·0
27	560·5	28	948·2		43	28·65	43	535·9				25	06·07	27	514·5	28	726·5
32	565·9	33	955·4				44	535·8	44	974·2				29	517·4		
37	568·6	38	964·4		45	26·72			46	967·6		30	06·03	32	517·6	33	723·5
42	570·9	43	979·9				47	535·1	48	967·7		35	06·12	37	505·8	38	730·2
47	570·8	48	1006·4		50	25·02	52	529·1	53	954·8		40	06·09	42	499·7	43	732·5
52	576·0	53	1005·5		55	19·69	57	534·1	58	942·7		45	04·71	47	511·7	48	743·8
57	577·7	58	1017·0	17 7	0	20·06	2	539·8	3	940·7		50	05·72	52	514·2	53	721·2
2	577·5	3	1016·0		5	17·96	7	552·5	8	941·8				54	504·5	54	730·9
7	572·6	8	1029·0		10	23·32	12	535·9	13	934·3		55	11·72	56	495·4		
12	572·7	13	1013·3		15	24·39	17	528·5	18	946·4				57	491·0	58	700·7
17	559·9	18	1009·1		20	20·23	22	525·9	23	938·5				59	489·6		
22	558·7	23	995·1		25	16·70	27	535·7	28	942·1	17 13	0	15·41	1	486·1	2	681·0
27	546·9	28	1000·8		30	16·19	32	535·6	33	936·8				3	488·6		
32	553·0	33	974·9		35	15·47	37	537·4	38	933·4		5	15·62	7	483·1	8	647·9
37	555·1	38	961·7		40	13·88	42	537·8	43	927·8				9	484·8		
42	551·6	43	952·3		45	14·10	47	532·8	48	929·5		10	11·75	12	494·6	13	648·1
47	557·7	48	936·2		50	13·72	52	534·3	53	935·2		15	10·47	17	502·8	18	652·3
52	561·3	53	928·3		55	13·23	57	533·5	58	923·0		20	13·29	22	503·5	23	650·4
57	563·2	58	920·5	17 8	0	18·10	2	526·7	3	929·9		25	15·92	27	504·3	28	627·6
2	565·0	3	915·6		5	15·99	7	520·1	8	893·2		30	16·45			31	618·8
7	559·4	8	915·9		10	12·13	12	522·8	13	904·7				32	502·9	33	615·2
12	559·4	13	917·5		15	11·30	17	521·5	18	895·8		35	16·15	36	495·3		
17	552·2	18	927·7		20	11·35	22	523·9	23	890·0				37	497·5	38	613·4
22	546·6	23	939·8		25	10·13	27	523·9	28	875·6				42	501·4	43	618·6
27	549·9	28	941·9		30	10·38	32	525·7	33	861·8		44	12·90				
32	549·5	33	936·1		35	11·12	37	527·9				45	11·95	47	511·2	48	630·3

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

April 17ᵈ 6ʰ 20ᵐ. The readings of the bifilar diminished slowly and without vibration from 20ᵐ till 23ᵐ 55ˢ, when they began to increase, continuing to increase till 29ᵐ 15ˢ, when they again diminished gradually till 36ᵐ, still without vibration; at 37ᵐ the magnet began to vibrate slightly.

* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′
17 13			52	519·7	53	643·7	25 12	5	24 50·46	7	493·9	8	637·1	26 13	0	25 28·32
	55	25 08·66	57	525·4	58	660·6		10	24 59·39	12	479·1	13	645·6		5	27·55
17 14	0	08·77	2	525·7	3	676·4		15	25 08·08	17	484·4	18	646·9		10	25·81
	5	10·18	7	520·4	8	692·0		20	12·87	22	501·9	23	636·9		15	24·01
	10	10·30	12	518·5	13	704·7		25	16·23	27	497·2	28	602·5		20	21·98
	25	13·69	27	516·5	28	732·2		30	17·53	32	496·9	33	572·1		25	20·20
17 15	0	17·00	2	513·3	3	746·5		35	17·26	37	498·0	38	554·6		30	19·17
								40	16·39	42	505·1	43	565·2		35	17·84
18 9	0	25 17·12	2	531·0	3	751·4		45	14·20	47	509·8	48	580·2		45	16·26
	55	13·46	57	527·6				50	12·33	52	515·1	53	593·5		55	14·23
18 10	0	14·92	2	526·1	3	746·2		55	11·44	57	518·6	58	610·1	26 14	0	13·63
	5	15·05	7	524·6	8	745·5	25 13	0	10·61	2	522·1	3	621·4		5	15·02
	10	16·16	12	523·9	13	744·3		5	10·77	7	523·5	8	631·7	26 15	0	16·30
	15	16·28	17	518·2				10	12·16	12	521·9	13	642·4	26 16	0	20·49
	20	16·95	22	518·1	23	744·6		15	13·32	17	520·7	18	649·8		5	20·82
	25	18·97	27	519·9	28	743·5		20	13·93	22	519·5	23	659·9		10	21·70
	30	19·31	32	523·5	33	740·2		25	14·20	27	518·7	28	667·4		25	22·87
	35	19·28						45	14·80	47	522·8	48	689·3		30	23·27
18 11	0	12·73	2	528·6	3	719·9	25 14	0	14·40	2	522·5	3	697·6		35	24·32
	10	11·32	12	510·2	13	718·5		15	15·14	17	521·6	18	702·3		40	23·21
	15	10·48	17	507·7	18	716·5		30	14·13	32	522·4				45	23·99
	20	08·73	22	509·8	23	714·7	25 15	0	16·82	2	521·1	3	719·8		55	22·99
	25	09·12	27	512·3										26 17	0	23·02
	30	09·37	32	516·6			26 0	0	25 23·54	2	499·4	3	739·5		10	22·37
	40	12·48	42	519·0						7	488·9	8	744·0		15	21·79
18 12	0	12·55	2	517·2	3	706·9				12	485·2			26 18	0	15·71
	35	14·33	37	513·9	38	715·3		15	27·17	17	492·3	18	745·7			
18 13	0	15·83	2	516·5	3	725·7		20	28·13	22	488·4	23	747·3	26 21	0	25 16·53
								25	29·64	27	487·1				5	18·10
21 21	0	25 13·02	2	517·2	3	758·3		30	32·03	32	487·1				50	14·13
	20	12·89	22	516·8	23	756·1		35	34·37	37	484·6	38	750·4		55	16·48
21 22	0	13·69	2	512·9	3	748·3		40	35·73	42	477·6	43	752·8	26 22	0	16·79
								45	34·88	47	472·2	48	752·1			
22 20	0	25 12·75	2	523·5	3	733·5		50	34·88	52	485·9	53	749·4	27 6	0	25 18·10
	15	13·34	17	524·2	18	753·0		55	35·89	57	482·2	58	746·9		10	17·84
	30	12·78	32	522·7	33	748·4	26 1	0	33·28	2	488·1	3	740·6		30	15·62
22 21	0	12·46	2	520·0	3	763·7		5	32·30	7	497·6	8	733·9			
								10	31·55	12	507·7	13	728·5		35	11·28
25 7	0	25 13·12	2	572·3	3	922·9		15	30·91	17	507·6	18	727·2		36	09·26
	5	25 04·01	5	582·4				20	29·83	22	509·3					
			7	587·1	8	988·5		25	28·16	27	512·9				40	03·37
	9	24 54·60	9	596·4				30	26·94	32	513·5				41	25 02·79
	10	24 51·27	10	605·0				35	25·87	37	515·8					
			11	600·0				40	25·81	42	517·8				45	24 58·22
	12	24 46·79	12	610·7				50	26·34	52	521·9	53	727·0		46	24 57·48
			13	606·4	13	1015·4	26 2	0	26·23	2	525·3	3	726·1			
	14	24 43·32	14	601·3			26 4	0	26·90	2	548·6	3	765·3		50	24 56·16
	15	24 43·70	15	694·3						7	543·7					
	16	24 44·70	16	587·9				10	25·26	12	541·6	13	772·0		55	25 04·31
			17	583·2	18	906·6				22	528·8	23	783·3		56	05·80
			19	582·8						27	521·4	28	788·0			
	20	25 01·34	22	561·7	21	876·5		35	25·56	37	523·4			27 7	0	09·69
	23	09·12			23	870·4	26 5	0	24·69	2	509·0	3	806·6		5	12·28
			24	543·1						12	526·8	13	810·1		10	13·69
	25	08·52	26	530·9				15	20·29	17	544·7	18	807·2		20	16·13
			27	528·9	28	860·4		20	21·10	22	541·7	23	806·8		25	16·30
			29	530·7						27	534·8				35	15·47
	30	04·12	32	531·8	33	853·8		50	18·84	52	522·5	53	820·5		45	16·12
							26 6	0	14·08	2	518·5	3	838·0		55	16·50
25 11	0	25 16·99	2	529·3	3	728·0		25	14·26	27	540·7	28	827·9	27 8	0	16·84
25 12	0	24 48·47	2	515·8	3	640·2	26 7	0	16·92	2	531·8	3	811·1		10	18·05

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

April 25d 7h 0m—30m. For observations before and after this time, see *Term-Day Observations*.
April 27d 6h 25m. The declination and bifilar magnets had not changed their position since the observation at 10m.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
2	510·6	3	625·4	27 9	0	25 17·89	2	532·9	3	747·2	30 17	15	25 18·54	17	509·5	18	674·2
7	508·7	8	615·8		30	12·85	32	527·0	33	742·6		25	18·84	27	512·5		
12	509·8	13	609·5	27 10	0	16·70	2	519·6	3	738·9	30 18	0	14·58	2	518·8	3	672·9
17	508·4	18	604·3		10	18·16	12	526·7	13	730·2							
22	509·7	23	601·5		15	17·34	17	522·8	18	729·0	1 7	0	25 12·15	2	540·9	3	761·6
27	510·3	28	602·8		25	14·30	27	521·8	28	727·7		10	09·30	12	559·0	13	758·9
32	507·3	33	603·9		30	16·97	32	518·8	33	726·1		15	12·18	17	549·9	18	761·6
					35	17·70	37	516·7	38	723·7		25	11·03	27	548·2	28	755·9
47	507·9	48	622·3		40	16·89	42	513·1						40	537·9		
57	512·9	58	636·1		50	20·20	52	508·1	53	716·1	1 8	0	14·50	2	535·7	3	754·6
2	516·2	3	641·6		55	21·09	57	507·3	58	710·4	1 10	0	10·97	2	522·7	3	735·3
7	518·4	8	650·6	27 11	0	21·24	2	511·7	3	703·7		15	12·04	17	520·0	18	736·6
2	515·8	3	676·0		15	20·32	17	524·6	18	689·5	1 11	0	09·42	2	516·6	3	699·6
2	490·0	3	622·2	27 12	0	19·41	2	525·6	3	697·3		5	08·68	7	516·4	8	698·6
7	491·6	8	615·6									10	08·53	12	514·4	13	699·4
12	494·5	13	610·4	29 2	0	25 26·13	2	525·5	3	742·3		15	07·94	17	511·3	18	701·2
27	486·7	28	582·9		30	26·16	32	510·0	33	735·2		20	07·82	22	508·1		
32	493·0	33	581·4		45	26·30	47	519·2	48	729·5		25	07·47	27	507·3		
37	494·7	38	581·9	29 3	0	25·53	2	527·8	3	729·3		30	07·07	32	508·1	33	697·5
42	499·1	43	583·9	29 4	0	25·11	2	516·5	3	737·5		35	08·05	37	509·3		
47	499·2	48	590·4				37	518·5	38	766·4		40	09·53	42	513·0	43	697·7
57	502·5	58	602·5	29 5	0	22·85	2	539·0	3	764·4		45	10·13	47	517·3	48	695·0
2	501·5	3	612·7	29 7	0	17·61	2	538·2	3	787·9		50	09·56	52	518·7	53	690·7
12	510·1	13	622·4		40	09·19	42	530·2	43	810·3		55	09·46	57	520·1	58	685·5
17	513·4	18	626·1		45	09·42	47	531·8			1 12	0	08·88	2	517·5	3	680·7
2	519·0	3	647·6		50	10·23	52	532·0				5	07·27	7	517·8	8	675·8
				29 8	0	12·78	2	529·1	3	805·2		10	06·26	12	516·5	13	674·9
2	510·8	3	731·6									15	05·45	17	515·6	18	672·5
7	508·0			29 11	0	25 15·54	2	532·5	3	739·5		40	09·35	42	515·0	43	679·0
52	511·4	53	746·9		5	14·91	7	555·1	8	726·5	1 13	0	12·83	2	519·7	3	674·1
57	505·4				10	18·60	12	557·9	13	716·9							
2	504·0	3	747·8		15	19·64	17	552·4	18	710·9	2 11	0	25 12·85	2	541·8	3	696·8
					20	17·84	22	546·9	23	699·3		5	12·20	7	537·7	8	695·2
2	547·6	3	768·0		25	15·51	27	540·3	28	693·5		10	11·69	12	534·2	13	692·8
12	547·4	13	774·1		30	14·01	32	535·1	33	690·7		15	11·98	17	531·7	18	690·0
32	528·1	33	788·2		35	12·56	37	527·0	38	689·0		20	12·46	22	531·1	23	687·9
34	518·8				40	10·61	42	525·8	43	691·4		40	15·76	42	528·9	43	668·4
					45	09·39	47	524·3	48	697·2	2 12	0	11·14	2	524·7	3	645·4
37	514·7	38	798·5		50	09·42	52	527·8	53	704·1		5	08·80	7	527·7	8	641·8
39	520·9				55	10·85	57	528·7	58	706·4		10	07·98	12	529·7	13	639·1
				29 12	0	10·75	2	528·5	3	704·7		15	08·05	17	527·5	18	637·5
42	527·3	43	804·1		5	09·30	7	529·7	8	703·2		30	08·05	32	515·4	33	634·7
44	533·6				10	08·59	12	529·5	13	703·3		45	05·79	47	513·4	48	630·9
					15	08·61	17	529·8				50	05·36	52	511·0	53	631·4
47	543·6	48	800·3		30	08·18	32	527·1	33	698·1		55	05·79	57	507·9	58	636·9
49	552·1				35	08·08	37	523·3	38	698·2	2 13	0	07·60	2	509·4	3	642·3
52	566·8	53	793·5		40	07·60	42	520·6				5	09·54	7	509·1	8	649·7
54	571·4				50	08·26	52	517·4	53	702·9		10	11·30	12	510·0	13	652·6
				29 13	0	09·86	2	514·3	3	711·8		15	12·60	17	510·3	18	656·4
57	569·2	58	795·8		10	12·01	12	516·0	13	716·0		30	16·86	32	515·2	33	659·8
59	563·3			29 14	0	15·76	2	520·1	3	721·4	2 14	0	17·34	2	516·9	3	652·2
2	554·5	3	798·7								2 15	0	15·18	2	506·5	3	662·3
7	549·7	8	796·4	30 14	0	25 23·07	2	512·4	3	635·4		25	19·51	27	512·0	28	661·4
12	545·1	13	792·1		5	23·72	7	514·0	8	630·0		30	19·69	32	511·8	33	658·5
22	543·8	23	783·5		10	23·59	12	514·0	13	622·3		45	18·72	47	517·6	48	654·0
27	534·4	28	782·1		35	20·30	37	516·0	38	594·9	2 16	0	17·00	2	519·1	3	661·8
37	541·0	38	775·3		50	20·23	52	514·3	53	618·7	2 18	0	16·90	2	511·3	3	680·0
47	535·8	48	774·2	30 15	0	19·32	2	514·1	3	608·1		10	18·77	12	514·2	13	676·2
57	532·0	58	772·1		30	16·82	32	516·3	33	626·5		15	19·84	17	515·6	18	673·3
2	531·4	3	771·1	30 16	0	16·65	2	524·7	3	629·0		20	20·36	22	516·4	23	669·9
12	531·1	13	767·5	30 17	0	14·73	2	504·3	3	657·4		25	20·15	27	518·2	28	666·6

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

April 29d 11h 0m. The bifilar magnet vibrating 10 divisions.

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
2	19	0	25	19·76	2	522·5	3	657·3
3	4	0	25	26·32	2	525·8	3	737·2
		35		16·53	37	550·7	38	765·7
		40		17·46	42	548·0	43	768·8
		45		17·70	47	546·3	48	772·1
3	5	0		17·74	2	546·1	3	785·5
3	6	0		20·18	2	542·3	3	806·0
		15		20·11	17	541·2	18	804·0
					30	545·5		
		45		20·38	47	535·6	48	803·9
3	7	0		18·84	2	537·5	3	797·8
3	8	0		18·16	2	526·8	3	788·0
		30		19·68	32	528·2	33	765·3
3	9	0		18·43	2	526·2	3	749·5
3	19	0	25	13·59	2	517·6	3	737·1
		10		15·01	12	518·4	13	737·3
3	20	0		13·57	2	516·2	3	742·8
5	15	0	25	24·96	2	529·9	3	685·7
		5		25·09	7	532·5	8	679·3
		10		24·50	12	533·7	13	672·7
		20		22·20	22	534·7		
		30		18·75	32	529·4	33	652·1
		40		15·54	42	527·9	43	653·5
		50		13·43	52	527·3	53	657·1
5	16	0		12·42	2	530·8	3	666·1
		10		11·75	12	527·6	13	672·9
		20		11·51	22	525·0	23	681·0
		30		12·78	32	523·1	33	690·1
5	17	0		14·84	2	525·2	3	703·9
7	16	0	25	18·63	2	503·6	3	721·4
		10		20·56	12	497·8	13	708·3
		15		22·58	17	494·1	18	703·7
		20		23·56	22	492·4		
		25		24·22	27	492·4	28	700·5
		30		24·97	32	493·8	33	691·2
		35		27·32	37	496·0	38	673·3
		40		28·22	42	498·2	43	662·7
		45		26·18	47	503·1	48	650·8
		50		24·82	52	508·8	53	645·0
		55		23·43	57	516·9	58	643·9
7	17	0		27·29	2	516·6	3	652·9
		5		27·14	7	521·9	8	640·1
		10		26·87	12	525·5	13	630·9
		15		26·88	17	526·8	18	635·1
		40		22·98	42	534·2	43	625·1
7	18	0		20·85	2	529·2	3	626·1
8	2	0	25	21·84	2	513·2	3	726·3
					38	529·0		
					40	509·0		
		40		22·77	42	525·1	43	727·0
8	3	0		23·98	2	527·6	3	727·3
8	10	0	25	16·84	2	529·5	3	765·8
		5		12·40	7	534·1	8	754·3
		10		11·34	12	539·0	13	743·4
		15		12·69	17	544·6	18	732·1

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
8	10	20	25	12·25	22	542·1	23	721·4
		25		14·43	27	548·0	28	709·7
		30		17·44	32	539·4	33	697·7
		35		18·87	37	532·0	38	689·4
		40		18·77	42	524·2	43	679·3
		45		17·39	47	520·4	48	677·6
		50		14·92	52	521·1	53	679·6
8	11	0		11·57	2	516·2	3	689·1
	*	5		06·73	7	522·4	8	689·5
		10		06·64	12	521·6	13	693·5
		15		08·09	17	517·1	18	697·0
		20		08·77	22	515·8	23	699·4
		25		09·46	27	516·2	28	701·5
		30		10·23	32	515·2	33	703·1
		45		12·22	47	516·1	48	698·5
		55		11·98	57	511·3	58	696·2
8	12	0		13·43	2	505·3	3	695·9
		5		13·69	7	501·5	8	694·3
		10		19·41	12	495·9	13	685·3
		15		21·14	17	497·7	18	664·2
		20		22·11	22	500·5	23	636·7
		25		21·90	27	500·0	28	615·9
		30		23·25	32	504·6	33	598·7
		35		23·43	37	511·1	38	589·6
		40		23·88	42	510·0	43	583·6
		45		22·47	47	513·2	48	584·6
		50		21·93	52	514·4	53	586·6
		55		21·29	57	515·5	58	588·5
8	13	0		19·59	2	517·6	3	593·1
		15		16·84	17	515·9	18	592·1
		30		14·51	32	514·7	33	593·2
8	14	0		15·38	2	527·0	3	611·4
8	15	0		19·62	2	519·5	3	633·8
		10		22·11	12	521·4	13	601·6
		15		19·58	17	528·2	18	590·8
		20		18·74	22	532·8	23	585·6
		25		17·96	27	531·7	28	584·8
		35		16·59	37	526·4	38	587·4
		45		14·55	47	520·9	48	590·9
		55		13·79	57	518·5	58	593·6
8	16	0		13·61	2	517·1	3	593·3
		10		12·75	12	517·4	13	601·1
8	17	0		13·52	2	524·5	3	638·0
8	19	0		10·83	2	523·0	3	669·3
		10		10·74	12	522·6	13	675·2
		20		12·04	22	521·7	23	678·8
8	20	0		12·92	2	518·2	3	688·0
9	12	0	25	11·57	2	519·3	3	714·3
		10		16·43	12	524·4	13	712·0
		20		17·13	22	524·5	23	704·4
		40		14·80	42	522·5	43	698·0
9	13	0		13·84	2	517·3	3	701·1
13	20	0	25	08·68	2	528·2	3	696·4
		20		07·78	22	522·3	23	697·3
		30		10·40	32	522·5		
13	21	0		12·09	2	515·9	3	690·7
		15		13·46	17	523·6	18	687·0
		30		13·43	32	520·1	33	691·8
13	22	0		12·78	2	512·9	3	691·3

Gött. Mean Time.		Declination.		
d.	h.	Min.	°	′
13	22	20	25	18·72
		25		16·90
		30		18·60
		35		16·65
		40		14·18
		45		16·62
		50		16·41
13	23	0		18·81
		10		20·92
		20		21·56
14	0	0		24·55
14	14	0	25	15·89
		5		16·75
		10		15·39
		15		14·73
		20		13·19
		25		13·34
		30		14·24
		35		13·09
		45		08·88
		50		06·64
		55		03·25
14	15	0		01·02
		5		01·58
		10	25	00·65
		15	24	59·84
		20	24	59·63
		25	24	59·95
		30	25	00·30
		35		04·05
		40		04·66
		45		07·42
		50		08·11
		55		09·71
14	16	0		11·34
		5		12·58
		10		14·60
		15		15·88
		20		17·39
		25		17·56
		30		18·97
		35		18·70
		40		18·82
		50		18·60
14	17	0		16·28
15	10	0	25	16·90
		10		19·51
		20		18·81
15	11	0		16·12
17	13	0	25	12·06
		20		12·06
		25		13·34
		30		14·01
17	14	0		14·31
21	12	0	25	02·59
	*	5		01·56

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
22	513.7	23	691.4	21 12	10	24 59.97	12	523.3	13	674.9	22 12	40	25 12.56	42	494.6	43	484.4
27	520.4	28	683.6		15	25 00.00	17	523.4	18	677.7		45	10.13	47	511.6	48	452.8
32	522.0	33	679.7		20	00.30	22	526.0	23	681.4		50	08.38	52	518.9	53	442.4
37	519.4	38	674.7		25	00.24	27	532.6				55	06.48	57	526.0	58	446.5
42	520.6	43	671.7		30	02.59	32	533.9	33	678.8	22 13	0	25 01.09	2	522.0	3	445.8
47	515.2	48	675.4		35	07.42	37	529.5	38	675.6		5	24 56.60	7	519.3	8	451.9
52	510.0	53	678.4		40	09.05	42	523.3	43	673.6		10	51.43	12	517.1	13	466.3
2	503.4	3	687.2		45	09.47	47	519.8	48	669.1		15	48.11	17	518.7	18	482.0
12	511.0	13	688.5	21 13	0	09.64	2	522.7	3	656.1		20	47.93	22	512.5	23	500.2
22	517.2				15	11.35	17	525.4	18	653.0		25	48.40	27	514.4	28	509.7
2	509.1	3	693.4		40	12.78	42	524.7	43	661.9		30	51.88	32	506.0	33	510.4
				21 14	0	12.02	2	526.5	3	666.7		35	54.68	37	505.0	38	513.0
2	517.2	3	613.1									40	54.70	42	506.3	43	516.7
7	532.3	8	609.2	22 5	0	25 25.70	2	550.1	3	692.3		45	55.17	47	512.8	48	522.6
12	526.8	13	602.0		10	24.35	12	542.5	13	696.8		50	57.17	52	517.0	53	527.7
17	521.9	18	593.8		15	24.28	17	535.9				55	24 59.46	57	519.9	58	525.4
22	524.7	23	587.4		55	23.54	57	543.8	58	697.9	22 14	0	25 00.00	2	523.1	3	530.0
27	524.0	28	585.0	22 6	0	23.68	2	546.0	3	697.7		5	02.08	7	520.4	8	532.8
32	522.7	33	572.9		10	23.07	12	547.4				10	02.82	12	520.0	13	544.9
37	519.0	38	553.5		20	22.87	22	550.5	23	696.3		15	03.13	17	521.1	18	555.7
42	522.2	43	534.9		25	22.94	27	552.2				30	06.73	32	516.9	33	574.5
47	521.2	48	524.9				28	554.5				40	09.17	42	512.3	43	595.3
52	522.5	53	519.6		30	22.94	32	552.4	33	697.9		50	12.70	52	511.0	53	616.5
57	525.5	58	520.1				34	550.3			22 15	0	15.04	2	514.5	3	622.8
2	522.1	3	527.9				37	552.2				10	16.28	12	514.3	13	623.1
7	521.3	8	533.3				39	550.6				40	17.96	42	521.1	43	630.7
12	523.6	13	545.5		40	22.31	42	553.4	43	698.0	22 16	0	16.15	2	526.5	3	647.3
17	522.4	18	541.6				46	557.0				35	20.06	37	497.7	38	636.2
22	518.9	23	546.2				49	557.2				40	22.50	42	485.8	43	619.9
27	517.9	28	551.0		50	23.07	53	549.3				45	24.67	47	476.4	48	592.5
32	518.0	33	553.8		55	22.74						50	27.56	52	473.7	53	558.6
37	514.2	38	546.0	22 7	0	21.56	2	552.2	3	703.0		55	28.63	57	477.6	58	547.4
42	512.0	43	545.0	22 8	0	19.73	2	545.9	3	722.5	22 17	0	27.58	2	487.1	3	524.3
47	503.3	48	541.3	22 9	0	09.29	2	538.7	3	743.8		5	31.06	7	483.4	8	508.6
52	498.6	53	536.1		20	11.05	22	530.8	23	748.6		10	30.08	12	490.0	13	508.9
57	498.6	58	539.5		30	12.56	32	537.0	33	743.1		15	29.93	17	495.3	18	505.3
2	496.8	3	545.3		40	14.40	42	531.7	43	735.2		20	30.10	22	492.8	23	510.5
7	492.4	8	550.2		50	14.03	52	532.0	53	730.9		25	29.29	27	497.2	28	519.3
12	494.6	13	552.3	22 10	0	09.74	2	540.6	3	724.2		30	27.84	32	504.2	33	531.9
17	499.5	18	549.6		10	10.65	12	529.7	13	729.9		35	29.39	37	517.0	38	539.2
22	501.1	23	549.2		20	09.93	22	536.0	23	725.7		40	26.23	42	509.9	43	546.8
27	505.7	28	555.3		30	12.95	32	532.0	33	724.3		45	25.74	47	512.6	48	545.2
32	506.0	33	564.8		40	15.02	42	529.8	43	720.6		50	23.52	52	515.2	53	546.8
37	511.8	38	573.8	22 11	0	14.67	2	525.9	3	705.1		55	23.46	57	521.7	58	556.6
42	513.6	43	581.5	*	10	12.02	12	529.9	13	696.7	22 18	0	25.04	2	518.8	3	563.7
52	518.1	53	592.6		20	10.28	22	527.4	23	688.7		5	24.57	7	518.8	8	567.7
2	521.2	3	604.3		25	08.63	27	529.7	28	685.1		15	24.45	17	519.9	18	572.2
					30	08.31	32	529.6	33	683.3		30	20.60	32	520.1	33	584.2
2	542.5	3	701.8		35	09.42	37	532.5	38	678.7	22 19	0	15.92	2	513.7	3	627.5
12	541.6	13	693.1		40	11.64	42	530.3				10	14.46	12	512.2	13	638.7
22	534.8	23	692.1		45	13.44	47	529.3	48	670.3						14½	634.0
2	530.2	3	676.7		50	13.39	52	527.2	53	663.6		15	14.11	17	512.9	18	638.1
					55	14.21	57	524.1	58	659.5		40	13.90	42	502.9	43	652.2
2	525.3	3	714.4	22 12	0	15.99	2	520.2	3	649.8	22 20	0	13.37	2	505.8	3	663.3
22	524.6	23	718.2		5	16.80	7	513.8	8	643.5	22 21	0	17.46	2	505.8	3	669.0
27	525.0	28	717.2		10	15.81	12	512.3	13	632.2		24	17.36	25	510.5	25	675.1
32	527.2	33	718.0		15	13.19	17	511.7	18	622.6	22 22	0	17.17	2	513.6	3	674.1
2	527.0	3	715.7		20	13.54	22	500.9	23	614.2							
					25	15.78	27	499.2	28	592.6	23 7	0	25 19.44	2	550.6	3	725.2
2	525.3	3	673.5		30	17.80	32	499.1	33	576.8				24	566.1		
7	521.5	8	673.8		35	16.55	37	500.3	38	538.8		35	12.16	37	564.0	38	711.4

BIFILAR. $k=0.000140$. BALANCE. $k=0.0000085$.

* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers*.

Gött. Mean Time. d. h.	Declination. Min.	° ′	Bifilar Corrected. Min.	Sc. Div.	Balance Corrected. Min.	Mic. Div.
23 7	40	25 11·37	42	563·5		
	45	12·04	47	557·0	48	712·8
	50	10·74	52	557·3		
	55	10·80	57	562·9	58	713·8
23 8	0	15·44	2	550·5	3	716·5
	5	15·07	7	540·3	8	717·2
	10	14·13	12	537·1		
23 9	0	16·89	2	534·6	3	710·6
23 11	0	15·54	2	531·8	3	698·0
	10	13·90	12	537·1	13	688·3
	15	14·64	17	537·0	18	682·7
	20	14·70	22	533·7	23	683·6
	40	15·01	42	527·0	43	686·3
23 12	0	12·72	2	531·8	3	691·5
	5	12·06	7	537·0	8	695·9
	10	12·82	12	537·2	13	692·1
	25	14·46	27	532·3	28	682·8
23 13	0	13·50	2	521·9	3	706·3
	30	14·35	32	523·3	33	686·0
23 14	0	17·10	2	520·4	3	697·8
24 5	0	25 17·36	2	546·8	3	708·6
	10	16·01	12	555·9	13	711·0
	15	14·51	17	554·0		
	25	13·72	27	557·2	28	712·2
	30	14·18	32	556·3		
	35	12·22	37	556·2	38	713·7
24 6	0	18·13	2	551·4	3	721·6
27 8	0	25 10·11	2	547·8	3	716·8
	5	10·70	7	550·1		
	10	11·51	12	551·0	13	716·8
	15	12·83	17	549·1		
	25	14·06	27	543·5	28	716·2
	40	14·13	42	537·3	43	718·9
27 9	0	15·38	2	536·9	3	716·8
27 10	0	13·96	2	531·4	3	710·9
	10	12·92	12	531·1	13	709·2
	15	12·29	17	531·3		
27 11	0	12·51	2	524·2	3	697·7
27 15	0	10·31	2	526·4	3	661·0
	20	10·03	22	525·1	23	664·0
27 16	0	12·00	2	527·9	3	667·5
28 9	0	25 12·56	2	545·5	3	712·7
	20	15·52	22	535·4	23	711·0
	30	15·24	32	538·7		
	45	14·73	47	542·0	48	703·4
28 10	0	14·10	2	534·6	3	702·1
1 11	0	25 11·15	2	541·1	3	688·6
	5	10·65	7	542·7	8	689·5
	10	10·80	12	544·0		
	20	11·15	22	546·8	23	688·9
	35	11·44	37	546·3	38	687·6
1 12	0	12·75	2	540·1	3	689·4
2 15	0	25 13·83	2	529·5	3	710·9
	5	12·78				
	10	12·92	12	530·2	13	707·2
	15	12·22	17	530·7	18	708·8

Gött. Mean Time. d. h.	Declination. Min.	° ′	Bifilar Corrected. Min.	Sc. Div.	Balance Corrected. Min.	Mic. Div.
2 15	20	25 14·80				
	30	14·60				
2 16	0	17·49	2	524·2	3	710·0
	15	18·13	17	524·2		
2 17	0	15·99	2	530·6	3	694·3
8 11	0	25 13·46	2	535·7	3	691·0
	15	11·98	17	538·2		
8 12	0	15·15	2	533·7	3	689·4
10 14	0	25 16·10	2	529·1	3	662·4
	10	16·99	12	538·6	13	653·3
	15	19·37	17	532·5	18	650·2
	20	20·92	22	530·0	23	645·8
	25	22·22	27	527·0	28	641·9
	30	22·33	32	523·6	33	637·4
	35	21·66	37	520·8	38	633·2
	40	20·47	42	519·4		
	55	17·47	57	518·0	58	627·8
10 15	0	17·10	2	526·6	3	628·4
11 13	0	25 15·94	2	531·3	3	698·2
	30	16·28	33	530·2	33	690·9
11 14	0	16·72	2	532·9	3	691·0
	35	15·41	37	529·7	38	691·4
11 15	0	15·44	2	529·3	3	691·1
12 13	0	25 16·95	2	534·7	3	688·5
	30	16·82	32	533·8	33	688·9
12 14	0	16·73	2	531·7	3	690·4
12 15	0	18·95	2	533·8	3	686·2
	10	18·70	12	534·4	13	683·6
	25	17·36				
12 16	0	16·32	2	532·2	3	682·9
13 11	0	25 12·70	2	537·4	3	682·2
	10	13·49	12	534·3	13	683·2
	30	14·60	32	535·8	33	683·0
13 12	0	14·94	2	534·3	3	681·7
13 13	0	14·77	2	533·4	3	677·3
	30	14·58	32	535·4	33	678·4
13 14	0	14·77	2	533·3	3	672·2
	30	14·82	32	535·6	33	678·1
13 15	0	12·72	2	530·6	3	671·6
16 13	0	25 24·30	2	540·9	3	639·1
	5	24·22	7	543·1	8	629·9
	10	23·32	12	544·3	13	621·4
	15	21·68	17	547·5	18	611·7
	20	20·43	22	547·4	23	604·0
	25	19·02	27	547·2	28	596·1
	30	16·45	32	542·2	33	592·0
	35	12·73	37	535·3	38	593·1
	40	10·94	42	535·3	43	591·7
	45	11·61	47	537·0	48	586·1
	50	10·74	52	528·0	53	582·8
	55	07·65	57	522·6	58	584·8
16 14	0	06·34	2	523·9	3	588·7
	5	05·43	7	524·4	8	590·7
	10	04·64	12	520·9	13	597·4
	15	03·63	17	518·7	18	608·6

Gött. Mean Time. d. h.	Declination. Min.	° ′
16 14	20	25 04·48
	25	05·96
	30	06·71
	35	08·08
	40	09·12
	45	09·42
	50	08·58
	55	09·37
16 15	0	09·56
16 16	0	10·09
16 17	0	09·89
	10	10·65
	15	11·84
	20	12·09
	25	13·27
	30	13·93
	35	15·74
	40	16·52
	45	16·93
	50	18·21
	55	17·91
16 18	0	17·27
	10	16·90
	15	14·62
	20	13·50
	25	12·36
	30	11·10
	35	11·74
16 19	0	12·60
	15	12·72
	20	11·79
	25	11·30
	30	13·86
	40	14·67
	45	15·42
	50	13·99
16 20	0	13·17
	15	13·20
	30	09·00
	40	12·92
	50	14·64
16 21	0	15·54
17 13	0	25 13·05
	15	15·94
	35	18·34
	40	18·30
17 14	0	24·94
	5	24·96
	10	23·07
	20	20·05
	40	16·99
17 15	0	15·59
18 1	0	25 21·53
	30	24·03
18 2	0	22·82
18 11	0	25 19·01
	10	21·56
	15	20·63

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

May 23ᵈ 13ʰ 30ᵐ. The magnets seem to have been slightly disturbed all day.
May 28ᵈ 9ʰ–10ʰ. The magnet with short scale used in the declinometer.
June 17ᵈ 10ʰ. The magnets have been unsteady throughout the day.
June 17ᵈ 13ʰ. There seems to have been a slight disturbance after this.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
22	523·8	23	616·3	18 11	20	25 18·90	22	530·0	23	651·1	28 18	35	25 08·31	37	529·6	38	654·0
27	525·2	28	622·8		25	17·49	27	529·1	28	650·8		40	06·81	42	533·3	43	653·9
32	528·7	33	627·1		30	17·02	32	529·5				45	07·81	47	530·3	48	652·9
37	531·9	38	632·2		45	21·56	47	527·1	48	658·8		50	07·20	52	534·6	53	651·7
42	535·5	43	632·4	18 12	0	12·06	2	530·4	3	664·4		55	08·03	57	532·6	58	655·9
47	534·3	48	633·0		10	11·61	12	532·5	13	668·8	28 19	0	08·82	2	532·0	3	655·9
52	534·3	53	635·1		20	12·11	22	529·2	23	671·2		10	08·34	12	531·8	13	663·6
57	525·9	58	636·6		30	12·80	32	530·8	33	673·1		20	07·94	22	531·6	23	661·8
2	536·3	3	637·8	18 13	0	14·20	2	531·0	3	680·1		40	10·87	42	530·0	43	660·6
2	532·3	3	674·3		30	14·35	32	532·8	33	681·7	28 20	0	11·35	2	528·6	3	661·4
2	521·6	3	677·1	18 14	0	14·70	2	533·4	3	690·1		20	10·87	22	525·5	23	662·2
12	514·8	13	679·9		30	13·36	32	530·6	33	690·4	28 21	0	08·95	2	525·5	3	658·1
17	514·2	18	677·5	18 15	0	13·86	2	530·4	3	691·8		20	08·97	22	522·4	23	657·0
22	516·7	23	683·7									30	12·38	32	516·5	33	661·3
27	518·5	28	691·1	20 13	0	25 13·37	2	539·8	3	671·5		35	13·37	37	517·9	38	656·0
32	521·0	33	696·4		30	14·46						40	13·43	42	513·1	43	657·3
37	522·8	38	690·5	20 14	0	10·92	2	531·2	3	669·5		45	12·93	47	513·7	48	658·7
42	524·1	43	690·6		30	12·18	32	532·2				50	13·93	52	512·3		
47	525·9	48	687·9	20 15	0	16·28	2	529·1	3	667·4		55	15·86	57	512·0	58	661·4
52	525·7	53	683·9		15	16·62	17	531·7			28 22	0	17·40	2	512·6	3	662·0
57	525·4	58	682·9		45	13·66	47	536·7	48	659·1		5	18·43	7	515·8	8	656·1
2	527·4	3	678·3		50	11·57	52	536·3	53	657·7		10	19·15	12	517·2	13	654·9
12	525·7	13	673·3		55	11·30	57	534·0				15	16·99	17	512·9	18	653·4
17	527·4	18	679·4	20 16	0	10·92	2	533·4	3	659·9		20	15·61	22	513·5		
22	521·3	23	680·2		5	11·61	7	533·1				25	15·01	27	516·8	28	649·9
27	522·1	28	677·7		15	10·83	17	535·8				30	15·76	32	516·7		
32	524·1	33	681·8		35	08·34	37	538·0			28 23	0	18·60	2	515·4	3	650·3
37	524·5	38	680·7		40	07·76	42	537·4	43	656·5							
2	521·8	3	674·4		45	08·65	47	535·9			29 10	0	25 13·05	2	540·6	3	652·6
17	513·1	18	677·3		50	08·52	52	534·4				30	13·56	32	532·1	33	656·5
22	508·9	23	674·7	20 17	0	07·98	2	530·9	3	659·3	29 11	0	14·98	2	533·6	3	656·7
27	517·2	28	672·6		25	08·16	27	530·9	28	663·3							
32	518·2	33	675·6	20 18	0	08·26	2	529·9	3	670·0	30 16	0	25 20·18	2	527·8	3	648·3
42	519·1	43	677·9									10	19·48	12	531·3	13	644·7
47	518·8	48	675·8	21 12	0	25 12·75	2	523·7	3	688·6		15	19·73	17	532·8	18	648·0
52	518·4	53	670·6		30	12·72	32	527·8	33	685·4		25	18·16	27	532·6	28	646·9
2	518·5	3	675·7	21 13	0	13·17	2	527·5	3	687·4		45	14·67	47	530·1	48	638·7
17	518·3	18	674·9		15	15·91	17	536·9	18	677·2		50	14·06	52	529·9	53	639·7
32	515·4	33	673·4		30	15·24	32	533·6	33	670·7		55	13·41	57	529·8	58	647·5
42	518·7	43	686·0	21 14	0	14·51	2	535·8	3	660·9	30 17	0	13·30	2	529·0	3	658·4
52	518·8	53	684·6									5	12·78	7	528·6	8	663·7
2	519·4	3	682·4	26 9	0	25 13·43	2	547·8	3	669·5		10	12·18	12	528·5	13	666·1
					15	14·13	17	538·8	18	669·8		15	12·06	17	527·9	18	662·5
2	532·7	3	683·2	26 10	0	13·50	2	535·0	3	667·3		20	11·59	22	527·5	23	661·1
17	535·8											25	11·21	27	527·0	28	672·6
37	531·3			28 14	0	25 16·50	2	546·1	3	651·2		30	10·14	32	527·1	33	667·0
					35	16·25	37	546·7	38	650·1		35	10·13	37	526·3	38	670·9
2	531·7	3	661·5	28 15	0	14·77	2	536·7	3	649·7		50	10·13	52	525·6	53	667·7
7	532·1	8	652·7				17	542·0			30 18	0	10·03	2	525·2	3	667·4
12	533·8	13	645·6		20	16·72	22	539·3	23	648·3		20	09·42	22	524·8	23	664·8
22	534·6	23	641·6		25	14·37	27	539·2	28	648·8	30 19	0	09·42	2	524·1	3	672·2
42	535·6	43	646·6		30	14·68	32	538·4	33	650·5							
2	535·7	3	653·6		40	15·31	42	537·9	43	652·7							
				28 16	0	14·20	2	537·3	3	655·5	1 11	0	25 14·91	2	534·1	3	661·0
2	534·1	3	673·2	28 18	0	06·06	2	530·8	3	656·5		30	15·94	32	536·0	33	658·0
32	537·3	33	677·7		5	06·66	7	528·9	8	657·3	1 12	0	15·51	2	534·1	3	658·0
2	534·5	3	682·7		10	07·38	12	527·2			1 14	0	16·39	2	536·3	3	649·0
					15	06·37	17	531·6	18	660·5		15	19·31	17	535·1	18	646·1
2	552·7	3	666·5		20	09·64	22	531·3	23	657·2		30	18·25	32	535·0	33	645·1
12	536·7	13	657·8		25	10·83	27	527·0	28	656·7		45	17·22				
17	529·7	18	654·6		30	09·26	32	527·3	33	654·8	1 15	0	16·15	2	533·0	3	646·2

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

June 19ᵈ 0ʰ. Clock 20ˢ fast; set right.
June 28ᵈ 15ʰ. There seems to have been a slight motion in the magnets during the last three hours.

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
2 13	0	25 14·78	2	536·1	3	660·8
	15	15·47	17	536·7		
	40	15·41				
2 14	0	14·64	2	534·2	3	660·3
3 20	0	25 14·48	2	527·9	3	663·4
	15	10·97	17	527·6	18	660·6
	20	12·51	22	529·0		
	25	13·43	27	527·5		
	35	13·12	37	527·1	38	662·0
	40	13·36				
3 21	0	12·40	2	524·9	3	660·0
4 13	0	25 15·02	2	533·3	3	662·2
	30	15·51	32	534·5	33	660·9
4 14	0	15·32	2	534·3	3	660·8
	15	16·21	17	533·6	18	660·6
	30	15·42	32	533·8	33	658·6
4 15	0	15·74	2	531·9	3	662·3
	15	16·10	17	532·0	18	660·8
4 16	0	14·20	2	531·3	3	663·1
5 12	0	25 17·13	2	536·1	3	658·6
	5	16·48	7	535·2		
	15	14·89				
	25	14·20				
	40	13·47				
	45	13·46				
5 13	0	13·69	2	531·7	3	658·7
	30	13·94	32	529·7		
5 14	0	13·86	2	530·5	3	658·3
	40	13·49				
5 15	0	13·72	2	531·7	3	660·7
7 15	0	25 17·58	2	534·7	3	660·9
	10	18·16	12	534·6		
	20	18·03				
	35	18·67	37	528·1	38	652·4
	40	15·17	42	533·0	43	654·3
	45	15·59	47	539·0	48	653·5
	50	16·03	52	535·8		
7 16	0	15·51	2	534·5	3	654·4
7 18	0	10·33	2	534·5	3	671·8
	10	07·27	12	530·7	13	676·0
	15	07·94	17	532·0	18	676·2
	25	11·68	27	532·2		
	30	11·95	32	530·6	33	670·3
	35	13·32	37	528·9	38	669·5
	40	12·22	42	525·8		
	45	12·58	47	525·0	48	669·0
	50	13·86	52	523·7		
7 19	0	12·56	2	528·5	3	661·5
	20	14·87	22	535·3	23	653·1
	30	15·38	32	535·9		
7 20	0	14·23	2	533·1	3	647·6
8 4	0	25 22·13	2	544·0	3	711·4
	20	22·87	22	556·0	23	723·8
			32	575·6		
	35	22·27	37	568·0	38	733·4

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
8 4	45	25 23·88	47	550·7	48	756·1
	50	21·88	52	558·3	53	761·4
	55	21·34	57	561·3	58	764·0
8 5	0	21·91	2	562·7	3	761·1
	9	29·86				
	10	30·35	12	530·7		
	15	27·34	17	518·7	18	797·3
	20	24·66	22	520·2	23	805·1
	25	22·98	27	523·9		
	30	20·90	32	534·1	33	797·4
	35	22·24	37	535·5		
	45	20·85	47	542·2	48	784·0
	50	21·16	52	548·4	53	778·0
	55	21·50	57	550·5	58	772·9
8 6	0	21·36	2	551·9	3	764·6
	5	21·03	7	554·8	8	760·4
	10	21·44	12	557·7	13	754·6
	15	20·79	17	558·8	18	748·6
	20	21·44	22	558·6	23	744·2
8 7	0	20·63	2	563·8	3	708·7
8 8	0	17·44	2	552·9	3	700·9
	25	18·30	27	539·8	28	699·0
8 9	0	18·03	2	541·1	3	695·9
8 12	0	16·53	2	541·7	3	657·4
	15	15·81	17	542·5		
8 13	0	13·20	2	538·1	3	658·6
	5	13·96	7	538·6	8	659·7
	15	15·15	17	537·2		
	30	14·64	32	534·5	33	661·4
8 14	0	15·24	2	536·0	3	661·0
	10	16·82	12	533·3	13	662·2
	15	15·67	17	534·9	18	661·0
	27	17·56				
	30	17·09	32	536·6		
	35	17·61				
	40	16·73				
	50	14·75				
8 15	0	14·51	2	535·2	3	653·8
	30	12·98				
8 16	0	15·64	2	528·7	3	661·5
	10	16·95	12	529·0		
	15	16·46				
	25	16·60				
	40	16·77	42	525·5	43	650·4
	55	16·41				
8 17	0	16·05	2	525·9	3	645·2
	40	14·87				
	50	16·95	52	525·1	53	642·6
	55	17·06				
8 18	0	17·12	2	522·2	3	640·4
	7	18·41				
	10	18·74	12	519·9	13	637·0
	20	19·24	22	519·6	23	633·9
	30	18·37	32	521·4		
	45	19·28	47	520·0	48	638·4
	50	19·61				
	55	19·73				
8 19	0	19·59	2	523·0	3	635·5
	10	20·22	12	523·5		
	20	20·45				
8 20	0	17·33	2	521·7	3	652·1

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′
9 14	0	25 10·03
	5	09·54
	10	10·98
	20	12·04
	40	11·46
9 15	0	12·11
	45	16·08
9 16	0	18·14
	10	18·37
9 17	0	15·38
10 7	0	25 16·80
	20	12·80
	35	14·31
10 8	0	16·70
11 13	0	25 13·32
	30	14·67
11 14	0	14·96
11 15	0	16·21
	15	14·94
	35	19·79
	40	19·53
	50	19·24
11 16	0	18·48
	10	16·86
	20	16·01
	50	15·01
11 17	0	13·84
	30	15·86
11 18	0	14·24
12 20	0	25 10·16
	10	10·70
	25	10·77
	30	10·77
12 21	0	13·46
13 1	0	25 21·48
	25	21·53
13 2	0	21·86
13 3	0	21·59
	15	23·32
	20	22·98
	35	21·46
	40	22·20
	45	21·37
	50	22·15
	55	22·99
13 4	0	22·35
	5	22·13
	10	21·93
	15	21·86
	20	20·79
	30	20·79
	35	21·46
	40	20·82

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

July 2ᵈ 15ʰ. There was no change in the declination between 14ʰ and 15ʰ.
July 9ᵈ 6ʰ. Clock 15ˢ fast; set right.
July 12ᵈ 20ʰ 30ᵐ. There is a slight irregular up and down motion in the bifilar and balance.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
2	524·8	3	650·8	13 4			47	537·3			17 11	35	25 08·56	37	531·4	38	640·0
7	527·1	8	649·7	13 5	0	25 19·71	2	535·7	3	676·5		40	09·32	42	531·9	43	637·7
12	527·5			13 6	0	17·87	2	538·1	3	685·4		45	09·49	47	528·7	48	636·4
22	529·6						7	562·3	8	680·5		50	09·42	52	528·2	53	634·0
42	528·3	43	646·5		10	20·87	12	551·2	13	672·9	17 12	0	09·54	2	531·0	3	634·4
2	524·9	3	647·6		15	19·55	17	555·9	18	670·7	17 13	0	08·16	2	524·3	3	635·6
47	525·3	48	647·6		20	19·86	22	547·9	23	667·2		10	11·03	12	523·1	13	639·2
2	525·9	3	647·7		25	19·48	27	535·9	28	675·6		15	12·85	17	523·3		
12	526·1						37	534·5	38	683·4		20	13·59	22	523·7		
2	527·8	3	646·4		45	18·41	47	538·5				25	13·99	27	525·3	28	637·1
				13 7	0	17·63	2	539·8	3	678·1		30	14·71	32	528·0	33	636·4
2	538·3	3	684·3	13 8	0	13·88	2	543·3	3	679·1		35	18·90	37	532·1	38	631·5
22	542·8	23	681·7		5	11·57	7	545·7	8	681·2		40	22·45	42	530·7	43	621·1
37	544·0	38	683·0		10	10·90	12	547·5				45	24·86	47	529·3	48	614·4
2	540·4	3	677·1		15	09·96	17	547·8	18	685·6		50	24·80	52	530·4	53	606·2
					20	10·61	22	548·4				55	22·96	57	534·5	58	596·2
2	531·8	3	655·6		25	11·32	27	547·1			17 14	0	20·58	2	535·5	3	592·8
32	534·1				40	12·22	42	551·5	43	681·3		5	17·49	7	536·7	8	599·3
2	534·6	3	655·8	13 9	0	13·72	2	540·3	3	682·6		10	15·39	12	538·1	13	595·6
2	531·0	3	654·2									15	13·90	17	540·3	18	598·3
				15 13	0	25 15·56	2	532·6	3	654·8		20	13·67	22	538·4	23	601·0
37	537·8	38	648·0		10	18·16	12	532·7	13	653·6		25	12·83	27	537·1	28	605·0
42	537·6				15	18·57	17	529·6	18	650·5		30	13·52	32	536·3	33	609·1
					20	17·81	22	535·8	23	644·7		35	13·25	37	533·7	38	610·5
2	540·3	3	641·3		25	16·70	27	539·3	28	644·3		40	12·35	42	533·8	43	612·2
12	540·7				30	15·52	32	541·6	33	647·9		45	12·29	47	535·3	48	613·8
					35	14·26	37	545·3	38	632·6		50	13·25	52	535·7	53	615·5
					40	14·03	42	543·2	43	631·2	17 15	0	14·94	2	534·2	3	618·6
2	534·7	3	644·4		45	13·61	47	542·1									
				15 14	0	12·82	2	536·2	3	631·2	18 1	0	25 23·52	2	523·3	3	640·4
2	535·5	3	646·3									20	25·74	22	523·5	23	642·4
				16 12	0	25 16·86	2	541·9	3	654·9		25	24·55	27	522·5		
2	536·7	3	644·6		10	15·14	12	538·2						33	523·5		
6	539·1				15	13·50	17	535·2	18	640·8		35	25·71	37	523·7	38	640·4
12	534·7	13	647·7		25	14·35	27	538·2	28	648·6	18 2	0	26·81	2	531·1	3	634·3
17	532·7	18	650·4		35	14·26	37	533·9	38	652·8	18 10	0	09·76	2	530·7	3	664·1
27	534·8	28	633·1		50	18·16	52	548·6	53	626·6		10	10·43	12	531·4		
32	534·5	33	641·0		55	17·96	57	549·9	58	619·7		20	11·30	22	531·5		
2	528·1	3	660·1	16 13	0	16·82	2	549·8	3	618·0	18 11	0	12·75	2	533·4	3	651·5
					10	13·93	12	546·9	13	610·7							
2	543·4	3	632·5		15	12·72	17	545·3	18	609·7	21 14	0	25 13·63	2	537·7	3	652·5
7	546·6				20	11·88	22	543·4	23	609·1		15	14·17	17	539·8	18	645·8
27	531·1	28	643·1		25	11·41	27	540·7	28	609·2	21 15	0	13·12	2	537·8	3	643·7
2	537·1	3	640·4		30	11·57	32	537·5									
2	543·2	3	660·7		40	11·64	42	531·0	43	610·4	25 11	0	25 13·64	2	535·8	3	628·3
17	555·5	18	661·8		50	11·41	52	528·3				10	11·79	12	531·6	13	627·2
22	552·0			16 14	0	10·09	2	528·0	3	608·9		15	11·88	17	528·5	18	629·2
27	549·7	28	668·0		10	09·13	12	526·6	13	606·6		20	13·14	22	528·1		
37	543·7	38	671·2		20	07·40	22	522·4	23	607·9		35	15·62	37	532·5	38	624·7
42	543·0	43	674·5		25	06·91	27	522·3			25 12	0	15·91	2	529·5	3	620·5
47	534·9	48	683·2		30	06·70	32	521·3	33	611·8	25 13	0	19·66	2	532·1	3	600·8
52	529·1	53	691·7		40	06·70	42	521·8	43	616·6		5	18·85	7	533·1	8	599·1
57	521·8	58	692·9		50	09·89	52	524·2	53	622·2		10	19·35	12	528·3	13	601·6
2	520·9	3	691·4	16 15	0	11·54	2	525·5	3	624·6		15	17·74	17	527·8		
7	522·3	8	682·8									30	14·98	32	528·7	33	607·6
12	525·5	13	682·2	17 11	0	25 09·71	2	539·5	3	644·4	25 14	0	12·72	2	528·8	3	622·1
17	528·5	18	686·6		10	09·19	12	535·1				30	12·85	32	529·1	33	629·2
22	527·8	23	680·9		15	08·70	17	533·1	18	643·2	25 15	0	12·65	2	531·8	3	629·8
32	535·5	33	679·6		20	08·55	22	530·6									
37	541·6				25	08·41	27	528·6	28	642·9	26 12	0	25 12·11	2	535·8	3	631·0
42	538·1	43	675·9		30	08·26	32	528·2				10	13·16	12	533·9	13	631·9

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

July 17ᵈ 12ʰ—13ʰ. The declination remained between 25° 09′·8 and 25° 08′·4, the least declination being about 13ʰ 0ᵐ.

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
26 12	20	25 14·51	22	532·4		
26 13	0	14·35	2	531·4	3	625·5
27 0	0	25 22·03	2	514·7	3	616·3
	40	26·45	42	529·6	43	617·0
	45	27·66	47	526·9	48	618·6
	50	27·26	52	530·8		
	55	27·24	57	527·5		
27 1	0	26·47	2	531·5	3	621·6
	25	23·90	27	535·0	28	625·8
27 2	0	21·26	2	537·1	3	631·6
27 5	0	12·73	2	544·8	3	715·0
	10	06·81	12	558·2	13	712·8
	15	08·55	17	561·2	18	713·9
	20	11·51	22	559·3		
	25	13·57	27	553·7	28	715·8
	30	16·03	32	547·1		
	35	17·17	37	540·0	38	717·6
	40	17·49	42	539·7		
27 6	0	18·25	2	542·9	3	700·6
	15	18·60	17	544·0	18	691·7
27 7	0	18·25	2	555·1	3	683·3
27 8	0	09·46	2	551·0	3	710·8
	10	11·98	12	546·2		
27 9	0	16·95	2	536·9	3	678·4
27 11	0	14·38	2	538·9	3	634·8
	10	12·89	12	530·9	13	634·6
	15	12·06	17	524·5	18	634·2
	20	10·92	22	521·1		
	30	07·34	32	513·1	33	629·2
	35	06·50	37	517·5	38	625·8
	40	07·44	42	520·0	43	622·7
	50	08·43	52	525·4		
27 12	0	12·33	2	527·3	3	616·4
28 13	0	25 17·68	2	536·6	3	627·6
	20	17·15				
28 14	0	20·90	2	535·5	3	603·9
	10	22·20	12	534·3	13	595·5
	15	22·06	17	534·1	18	592·8
	30	19·51	32	535·8	33	581·4
	40	17·73	42	532·7	43	578·0
	50	17·42	52	533·2	53	578·3
28 15	0	17·51	2	533·5	3	575·9
	30	14·46				
28 16	0	12·18	2	524·2	3	600·9
	20	14·96	22	526·2	23	614·4
	40	15·04	42	527·8	43	617·8
28 17	0	14·87	2	525·8	3	621·2
31 2	0	25 27·42	2	559·9	3	597·1
	10	25·43	12	539·4	13	608·9
	15	25·40	17	533·4	18	612·0
	20	25·56	22	527·1		
	25	25·98	27	531·0	28	614·5
	30	26·37	32	533·5		
	35	26·47	37	544·0	38	611·8
	40	25·56	42	546·3		
	45	25·53	47	551·8	48	611·4
	50	25·56	52	557·3		
	55	24·42	57	553·2		

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
31 3	0	25 21·05	2	545·3	3	620·1
			29	560·4		
	30	25·53	32	556·9	33	622·7
	40	24·89	42	543·4	43	628·6
31 4	0	25·16	2	567·7	3	619·7
			15	519·1		
	15	22·03	17	524·8	18	643·6
	20	21·48	22	529·1	23	643·0
	25	22·78	27	548·3	28	634·5
	30	22·89	32	549·2		
	35	23·14	37	554·6	38	633·1
	40	23·04	42	557·3	43	629·9
	45	22·80	47	566·1	48	626·6
	50	22·85	52	563·4		
	55	22·18	57	557·3	58	629·9
31 5	0	22·22	2	547·5	3	636·0
	5	21·53	7	548·8	8	634·7
	10	21·59	12	550·4		
	15	21·77	17	551·9	18	630·6
	20	21·34	22	550·2		
			27	543·2		
	30	21·16	32	545·8	33	631·6
	35	21·19	37	557·8	38	626·5
	40	21·41	42	559·8		
	45	24·72	47	559·8	48	625·6
	50	20·83	52	551·1	53	628·6
	55	20·18	57	546·1	58	630·8
31 6	0	20·30	2	544·3	3	632·6
	15	20·79	17	542·6	18	629·8
	20	20·65	22	544·3	23	627·4
	30	20·72	32	547·1	33	623·8
	40	20·16	42	559·0	43	620·7
	45	20·18	47	564·1	48	617·9
	50	21·19	52	563·9	53	619·9
	55	20·72	57	553·1	58	623·7
31 7	0	20·77	2	553·8	3	623·1
	15	20·32	17	554·0	18	625·3
	30	17·15	32	556·9	33	628·9
	45	17·24	47	560·0	48	638·8
	50	16·66	52	550·7	53	641·7
	55	15·31	57	550·6	58	639·8
31 8	0	13·49	2	551·9	3	641·1
	10	08·55	12	561·6	13	636·6
	15	05·97	17	566·2	18	632·5
	20	07·81	22	574·3	23	628·0
	25	09·79	27	569·0	28	627·7
	30	11·19	32	570·9	33	625·1
	35	12·92	37	561·3	38	625·9
	40	15·36	42	555·1	43	626·5
	45	15·99	47	542·6	48	633·3
	50	16·03	52	547·0	53	629·3
	55	14·91	57	548·3	58	627·6
31 9	0	15·56	2	551·7	3	626·0
	5	16·79	7	554·5	8	624·1
	10	17·83	12	552·1	13	623·3
	15	17·26	17	548·1		
	30	16·32	32	543·8	33	627·4
	45	16·79	47	536·3	48	629·6
31 10	0	16·03	2	537·2	3	629·2
31 12	0	14·38	2	535·7	3	633·3
	30	11·30	32	533·6	33	637·0

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′
31 12	40	25 10·00
	50	11·07
31 13	0	11·64
	25	10·48
	40	10·77
	45	11·24
31 14	0	10·70
	30	12·65
31 15	0	13·46
1 3	0	25 25·09
	20	25·60
	25	26·14
	30	26·23
	35	27·24
	40	26·58
	45	26·52
	50	27·08
	55	26·10
1 4	0	25·36
	5	24·86
	10	27·35
	15	27·91
	20	26·90
	25	26·07
	30	26·27
	35	24·57
	40	24·75
	45	22·91
	50	23·19
	55	24·23
1 5	0	26·34
	5	23·16

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

Aug. $1^d\ 4^h\ 24^m +$. The bifilar reading gradually diminished from 24^m till $26^m\ 35^s$, increased till 33^m, decreased till $35^m\ 0^s$; at $39^m\ 50^s$ it had slowly increased, and then immediately diminished till $42^m\ 50^s$.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div	d.	h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
42	533·6	43	637·9	1	5			8	615·1	8	601·2	1	7	40	25 14·57	42	577·5	43	740·7
52	530·3	53	642·3					9	607·6					45	14·60	47	580·4	48	735·9
2	532·6	3	639·7			10	25 21·91	10	588·3							52	582·0	53	739·4
27	532·8	28	639·7					11	581·5					55	21·95	57	573·5	58	741·0
								12	582·8	12	621·1	1	8	0	21·50	2	565·8	3	738·6
47	532·4	48	640·1			13	22·51	13	584·9					5	18·95	7	559·7	8	731·4
2	530·0	3	639·8					14	578·4					10	16·13	12	558·1	13	745·1
32	531·8	33	638·9			15	22·01	15	576·6					15	14·84	17	550·7	18	766·6
2	534·9	3	633·9					16	574·6					20	09·10	22	549·8	23	764·0
								17	573·4					25	06·86	27	553·9	28	754·4
2	541·1	3	599·2					18	567·9	18	636·6			30	08·05	32	552·3	33	748·6
17	552·0	18	596·4					19	561·3					35	08·26	37	551·9	38	740·1
22	553·9	23	591·7			20	23·32	20	566·1					45	08·05	47	547·1	48	730·5
27	562·6							21	568·1					55	10·36	57	541·8	58	725·8
32	569·4	33	583·2					22	565·1			1	9	0	11·62	2	534·3	3	734·9
36	576·6							23	565·1	23	645·1			5	11·77	7	533·1	8	740·2
37	575·9	38	587·2					24	566·1					10	10·43	12	532·6	13	744·9
42	567·6	43	590·7			25	24·87	25	569·6					15	08·48	17	536·3	18	739·5
47	572·8							26	569·5					20	07·79	22	535·9	23	737·1
52	564·6	53	593·3					27	569·0					25	08·97	27	537·0	28	730·9
57	559·3							28	572·2	28	648·9			30	10·03	32	536·1	33	722·4
2	535·3	3	605·6					29	574·1					50	09·00	52	523·7	53	684·6
7	563·1	8	598·3			30	25·56	30	575·0			1	10	0	07·22	2	518·4	3	662·9
12	564·7							33	567·5	33	651·7			15	08·79	17	520·0	18	651·6
17	570·2	18	590·7			35	24·91	35	575·0					30	12·71	32	527·3	33	656·1
22	564·0	23	592·3					36	571·9			1	11	0	15·74	2	533·9	3	644·3
24	572·0							38	567·8	38	657·6			15	12·11	17	522·3	18	628·9
25	561·2					40	23·75	40	566·0					20	10·78	22	517·9	23	627·4
27	545·6	8	598·7					42	571·4	43	662·4			25	11·05	27	515·8	28	624·2
32	549·2	3	597·2					44	575·7					30	10·90	32	516·7	33	619·2
33	563·0					45	23·61	47	593·7	48	660·7			45	10·78	47	514·5	48	614·4
34	546·8							49	594·6			1	12	0	09·66	2	522·0	3	597·5
35	521·9					50	26·43	51	596·6					10	09·84	12	526·8		
36	523·6							52	587·5	53	669·8			15	09·91	17	525·7	18	590·2
37	523·1	38	610·3					54	578·6					25	09·86	27	519·3	28	573·9
39	534·5					55	25·96	56	568·1					30	12·02	32	514·7	33	560·6
40	546·3							57	563·7	58	688·9			35	13·16	37	510·0	38	547·7
41	518·5							59	562·3					40	15·04	42	516·1	43	546·2
42	495·2	42	619·1	1	6	0	24·55	2	549·3	3	710·1			45	13·43	47	523·7	48	520·5
43	490·9	43	624·4					4	547·3					50	06·54	52	515·9	53	514·8
44	494·1					5	23·18	7	552·8	8	732·7			55	05·08	57	512·8	58	500·2
45	494·1					10	21·51	12	567·8	13	756·9	1	13	0	07·25	2	518·2	3	495·2
46	500·2							14	555·6					5	06·79	7	520·4	8	498·3
47	507·2					15	23·75			16	769·8			10	06·88	12	521·5	13	503·5
48	513·2	48	623·4					17	559·2	18	770·3			15	05·76	17	521·8	18	517·6
50	525·6							19	564·5					20	04·71	22	522·2	23	530·1
52	538·4					20	17·42	22	560·9	23	774·6			40	06·71	42	514·3	43	551·5
53	527·2	53	613·2					24	573·1			1	14	0	12·73	2	519·8	3	597·5
55	565·8					25	11·77	27	576·4	28	756·1			20	12·78	22	524·6	23	658·3
56	570·4					30	13·05	32	571·0	33	746·5	1	15	0	16·62	2	523·2	3	613·8
57	580·2					35	10·38	37	571·6	38	736·2	1	19	0	19·98	2	522·5	3	616·9
58	584·4	58	604·0			40	11·35	42	573·4	43	735·2			10	16·89	12	523·0	13	611·5
59	595·7					45	12·82	47	576·2	48	735·7			20	17·09	22	521·3	23	613·4
0	611·4					50	13·12	52	583·0	53	737·5	1	20	0	13·49	2	510·9	3	630·2
1	620·1					55	13·90	57	580·9	58	742·1								
2	619·9			1	7	0	14·04	2	575·2	3	746·6	2	2	0	25 27·10	2	521·4	3	643·0
3	621·8	3	591·3		*	10	16·68	12	567·5	13	747·5			10	25·41	12	516·6	13	645·3
4	618·8					15	16·41	17	565·0	18	753·1			20	25·56	22	519·1		
5	614·8					25	11·86	27	576·7	28	746·9	2	3	0	26·74	2	518·9	3	667·6
6	613·9					30	12·78	32	576·1	33	741·6			25	19·78	27	535·1	28	688·3
7	612·6					35	12·85	37	576·4	38	742·1			30	21·48	32	530·6	33	691·6

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

Aug. 1d 6h 40m. Clock 4s slow.

* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers*.

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
2 3	40	25 22·33	42	528·9	43	691·4
	45	22·25	47	529·6		
2 4	0	22·01	2	537·1	3	681·2
2 11	0	25 14·51	2	543·4	3	588·9
	10	13·99	12	539·6	13	577·3
	15	16·87	17	534·4	18	576·7
	20	18·87	22	530·7	23	577·0
	25	20·05	27	529·6	28	574·9
	30	22·20	32	527·0	33	570·4
	35	24·43	37	524·6	38	561·8
	40	25·68	42	520·6	43	550·0
	45	25·53	47	522·7	48	531·9
	50	24·48	52	523·2	53	518·8
	55	22·69	57	523·1	58	510·2
2 12	0	21·29	2	523·4	3	511·3
	5	19·71	7	523·3	8	501·0
	10	18·38	12	522·3	13	500·0
	15	16·25	17	520·7	18	500·1
	20	14·13	22	521·4	23	501·5
	25	12·36	27	520·7	28	505·6
	30	11·51	32	522·4	33	512·2
	35	11·08				
	40	10·40	42	525·3	43	525·9
			47	530·3	48	530·0
	50	15·41	52	530·6	53	529·6
	55	15·59	57	528·0	58	526·8
2 13	0	14·50	2	525·5	3	527·0
	15	12·01	17	528·9	18	534·9
	40	14·92	42	524·8	43	555·7
2 14	0	16·65	2	524·9	3	556·8
*	15	14·73	17	527·9	18	549·0
			30	529·9		
	35	11·42	37	526·3	38	546·1
	40	11·79	42	519·6	43	547·7
	45	10·74	47	515·3	48	550·4
	50	09·49	52	512·6	53	551·5
	55	07·92	57	514·2	58	550·7
2 15	0	07·37	2	517·5	3	556·1
	5	08·50	7	519·5	8	563·0
	10	09·56	12	518·8	13	569·5
	20	10·67	22	521·5	23	578·6
	40	13·05	42	521·7	43	578·9
2 16	0	12·25	2	524·9	3	586·5
	10	09·82	12	528·4	13	590·7
2 17	0	13·19	2	522·6	3	606·1
	15	14·57	17	519·3	18	611·3
2 18	0	12·83	2	524·6	3	610·7
3 2	0	25 25·06	2	535·6	3	619·8
	15	24·53	17	516·9	18	585·1
	20	23·27	22	514·2		
	30	25·46	32	516·7		
	40	24·39	42	513·9	43	632·5
			52	528·6	53	628·3
3 3	0	21·73	2	530·4	3	628·0
			22	546·1	23	627·5
	25	21·53	27	544·4	28	632·1
	30	20·62	32	529·7	33	639·3
	35	19·98	37	525·0	38	642·2
3 4	0	19·79	2	537·1	3	641·8

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
3 6	0	25 16·18	2	541·8	3	659·1
	10	13·81	12	539·1	13	666·1
	15	11·95	17	544·8	18	667·6
	20	11·41	22	548·8	23	670·6
3 7	0	12·25	2	543·2	3	682·5
4 15	0	25 15·27	2	524·5	3	604·4
	15	16·46	17	530·0	18	604·4
	35	14·80	37	528·4	38	608·2
4 16	0	14·10	2	529·0	3	614·2
4 18	0	18·48	2	525·5	3	618·6
	10	19·32	12	527·0	13	615·4
	20	20·16	22	530·4	23	613·4
	30	20·33	32	532·2	33	609·9
4 19	0	20·72	2	527·8	3	609·4
	10	21·90	12	528·5	13	608·6
	20	20·92	22	528·8		
	40	17·96	42	527·7	43	617·9
4 20	0	14·28	2	526·5	3	612·6
4 21	0	12·85	2	514·4	3	628·5
	20	13·97	22	516·2	23	630·2
4 22	0	15·27	2	518·1	3	630·9
6 15	0	25 19·31	2	531·1	3	643·2
	20	18·03				
6 16	0	17·49	2	529·7	3	646·5
9 2	0	25 27·48	2	521·3	3	659·7
	25	25·33	27	523·2	28	660·4
			47	543·6	48	659·5
	50	26·82	52	565·3	53	651·5
	55	25·33	57	564·5	58	655·4
9 3	0	26·82	2	540·9	3	667·1
	5	26·00	7	536·6	8	670·1
	10	29·21	12	548·4		
	15	27·15	17	537·0	18	673·5
	20	26·57	22	533·0	23	675·4
	30	27·51	32	541·7	33	683·1
	35	28·38	37	542·6	38	686·9
	45	30·44	47	569·4		
	50	30·31	52	575·8	53	690·9
	55	28·08	57	572·8	58	711·3
9 4	0	28·25	2	572·4	3	711·2
	5	28·25	7	572·5	8	719·6
	10	26·48	12	563·4	13	735·3
	15	28·85	17	555·4	18	745·4
	20	30·76	22	545·9	23	757·1
	25	30·67	27	529·0	28	771·1
	30	27·89	32	517·4	33	778·6
	35	25·56	37	523·6	38	779·0
	40	26·23	42	531·0	43	775·9
	45	27·39	47	541·7	48	770·3
	50	27·53	52	542·4	53	768·8
			57	539·1	58	768·5
9 5	0	22·89	2	537·8	3	769·3
	10	23·14	12	534·0	13	769·5
	30	21·12	32	537·2	33	756·1
9 6	0	22·50	2	573·4	3	725·4
	5	21·46	7	573·0	8	725·5
	10	21·86	12	573·7	13	725·9
			14	578·7		

Gött. Mean Time.	Declination.	
d. h.	Min.	° ′
9 6	15	25 24·48
	20	24·26
	25	24·22
	30	22·44
	35	20·47
	40	19·58
	45	18·72
	50	19·42
	55	20·65
9 7	0	21·93
9 8	0	18·55
9 9	0	11·98
	5	16·95
	10	20·18
	15	18·70
	20	17·24
	25	15·39
	45	14·75
9 10	0	14·96
9 11	0	18·65
*	5	11·84
	10	13·43
	15	16·65
	20	15·72
	25	17·98
	30	18·27
	35	19·76
	40	21·44
	45	23·04
	50	24·10
	55	22·96
9 12	0	20·29
	10	15·41
	15	12·98
	20	10·07
	25	08·50
	30	08·75
	35	09·02
9 13	0	12·76
*	30	11·24
9 14	0	12·76
9 19	0	13·44
	25	17·44
	30	17·49
9 20	0	15·67
10 12	0	25 19·58
	10	17·71
	30	16·16
11 13	0	25 13·67
	15	11·37
	40	11·44
11 14	0	12·76
12 10	0	25 12·04
	5	13·20
	10	13·63
	15	14·13
12 11	0	15·74
12 15	0	19·91

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Aug. 2^d 17^h 15^m. The magnets are evidently unsteady, but the variations seem small.
Aug. 9^d 11^h 25^m. Clock 6^s slow; set right.
Aug. 9^d 14^h. Magnets slightly disturbed from 14^h till 16^h; appearance somewhat like an Aurora to NW.; many shooting stars.
* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
17	574·8	18	730·8	12	15	15	25	16·30	17	530·4	18	595·3	22	6				26	548·0		
18	571·3					20		15·27	22	531·1	23	594·2			30	25	20·72	32	539·1	33	765·7
22	567·2	23	736·5			25		14·04	27	528·5	28	595·6			35		19·55	37	537·4	38	766·4
27	556·2	28	745·5			30		12·78	32	527·5	33	596·8	22	7	0		18·10	2	531·9	3	762·1
32	551·6	33	753·4			35		11·57	37	526·3	38	599·1			10		16·82	12	532·2	13	754·3
37	552·8	38	756·6			40		11·24	42	525·2	43	602·1						17	536·3		
42	552·5	43	758·8			45		10·43	47	526·6	48	603·3			20		17·83	22	537·6	23	741·3
47	552·8	48	759·1			50		10·33	52	525·1	53	606·3			30		17·83	32	537·0	33	733·9
52	555·1	53	756·3	12	16	0		10·68	2	525·7	3	611·9	22	8	0		14·82	2	545·5	3	708·1
57	555·3	58	754·0			10		12·92	12	520·5	13	617·8	22	9	50		20·20				
2	559·6	3	752·5			15		12·92	17	519·7	18	617·9	22	10	0		09·03	2	535·2	3	625·1
2	549·2	3	727·2			30		13·57	32	522·3	33	618·8			5		04·28	7	544·0	8	622·8
2	558·1	3	669·0	12	17	0		14·64	2	527·2	3	617·7			10		03·60	12	546·4	13	619·2
7	546·0	8	665·9												15		04·12	17	545·9	18	618·7
12	531·9	13	665·7	16	10	0	25	09·59	2	535·5	3	651·2			20		05·58				
17	529·9	18	664·6			5	25	04·56	7	531·4	8	654·4			25		06·81	27	536·6	28	622·2
22	528·1	23	662·8			10	24	59·16	12	536·5	13	654·1			30		08·08	32	535·8	33	624·2
27	532·6					15	24	57·02	17	540·8	18	653·6			35		09·77	37	539·5		
47	532·3	48	658·9			20	24	57·24	22	541·1	23	651·8			45		14·78	47	543·9	48	621·8
2	529·2	3	659·0			25	24	59·26	27	536·7	28	651·2	22	11	0		19·39	2	539·1	3	611·9
2	539·6	3	623·0			30	25	00·60	32	534·0					10		15·52	12	532·5	13	602·1
7	566·8	8	612·0			35		01·04	37	533·3					20		13·12	22	528·3	23	601·1
12	581·5	13	597·7			40		01·99	42	533·2	43	647·1			30		11·30	32	530·6	33	602·5
17	575·0	18	585·4			45		02·94	47	533·7	48	644·5			40		12·70	42	528·7	43	601·0
22	572·0	23	571·9			50		04·10	52	532·1	53	642·6	22	12	0		12·13	2	523·7	3	602·1
27	561·5	28	562·4	16	11	0		05·79	2	532·1	3	635·1			30		21·76	32	533·1	33	588·3
32	555·7	33	550·7			10		07·99	12	530·9	13	634·1			40		19·19	42	537·1	43	562·9
37	549·6	38	538·5			20		10·45	22	532·5	23	632·5			45		17·46	47	536·6	48	559·1
42	540·9	43	530·8			35		13·64	37	533·0	38	627·9			55		17·96	57	534·7		
47	530·7	48	529·1	16	12	0		15·31	2	537·2	3	625·6	22	13	0		18·55	2	533·6	3	552·5
52	520·3	53	529·8	16	13	0		14·65	2	539·0	3	618·5			30		19·46	32	531·4		
57	513·5	58	532·9			20		12·40	22	543·5	23	614·0	22	14	0		24·73	2	522·7	3	548·8
2	510·6	3	538·4	16	14	0		15·29	2	540·3	3	611·2			10		26·01	12	519·7	13	538·4
12	515·4	13	546·5	16	15	0		10·70	2	532·5	3	622·5			20		25·53	22	512·6	23	525·4
17	517·0	18	555·2			30		11·15	32	535·6	33	628·3			25		23·52	27	514·6	28	523·0
22	522·4	23	563·3	16	16	0		11·82	2	534·2	3	631·8			35		22·94	37	510·1		
27	529·2	28	566·9												45		21·12	47	515·4	48	522·2
32	533·0	33	569·7	17	12	0	25	17·42	2	535·7	3	617·9			55		20·77	57	519·7	58	528·0
37	534·4					35		21·09	37	532·3	38	619·4	22	15	0		20·72	2	525·0	3	534·0
2	526·3	3	580·5												20		20·67	22	527·8	23	557·7
32	520·2	33	598·9	19	9	0	25	15·65	2	541·6	3	634·1			30		21·43	32	527·9	33	565·7
2	520·4	3	602·3			15		13·99	17	541·2	18	634·4	22	16	0		18·84	2	531·0	3	586·4
2	515·6	3	635·0	19	10	0		16·08	2	538·6	3	633·4	22	20	0		19·44	2	521·7	3	643·9
27	516·1	28	638·6												10		19·75	12	518·4	13	645·6
				22	2	0	25	25·47	2	545·0	3	619·4			15		18·88	17	517·2		
2	512·7	3	638·9			30		25·94	32	546·6	33	628·3	22	21	0		19·44	2	509·2	3	645·9
				22	3	0		26·60	2	540·0	3	642·9			5		18·90	7	517·6		
2	537·0	3	595·6	22	4	0		25·16	2	527·4	3	690·9			11		21·53	12	518·4	13	638·1
12	533·0	13	597·9						12	540·6	13	693·0			20		20·58				
32	532·4	33	606·3			15		24·22	17	543·8	18	694·2			40		20·15	42	518·1	43	638·7
2	531·6	3	589·7			40		24·22			43	709·8	22	22	0		22·62	2	516·9	3	639·2
17	533·7	18	588·5	22	5	0		21·44	2	533·4	3	734·2									
						10		20·06	12	540·8	13	735·9	23	1	0	25	28·42	2	519·5	3	651·7
2	524·8	3	595·6			20		20·65	22	540·4	23	737·9			5		29·32	7	521·2		
						30		20·85	32	545·7	33	737·0			10		30·78	12	524·4	13	652·7
2	544·3	3	632·7			40		20·79	42	557·8					15		30·45	17	520·5		
7	541·3	8	633·4			50		22·10	52	554·7	53	742·5			40		25·02	42	533·6	43	665·7
				22	6	0		22·57	2	552·8	3	749·7			50		25·19	52	527·1	53	673·6
17	536·7	18	635·6			5		24·75	7	551·4	8	753·5	23	2	0		23·21	2	528·1	3	679·5
2	533·0	3	635·7			10		24·19	12	544·6	13	757·3			15		20·60	17	536·5	18	684·5
2	532·3	3	601·5			15		22·10	17	545·5	18	760·0			20		20·87	22	540·0		

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′
23 2			32	549·8	33	681·3	23 6	20	25 20·18	22	526·0			26 15	15	25 16·68
			33	545·0				30	16·15	32	530·3	33	748·9	26 16	0	14·26
	35	25 23·01	37	557·0	38	680·0		40	17·36	42	534·7	43	733·1			
	40	24·45	42	551·7	43	681·0		50	19·15	52	535·4	53	723·4	29 10	0	25 17·06
			47	558·7	48	679·8	23 7	0	18·41	2	532·8	3	715·5		20	11·14
	50	23·85	52	553·1	53	681·7	23 10	0	20·76	2	542·6	3	634·8		25	08·08
	55	24·45	57	563·7	58	679·7		20	20·11	22	537·8	23	625·5		30	05·85
			59	570·7			23 11	0	16·86	2	532·3	3	638·6		35	06·01
23 3	0	25·47	1	576·2				15	18·03	17	536·0				40	07·32
			2	575·4	3	678·7	23 12	0	17·31	2	532·7	3	640·5		45	06·06
			4	572·6			23 13	0	18·82	2	538·9	3	620·2		50	06·39
	5	24·39	7	569·3	8	684·0		30	16·12	32	530·0	33	613·2		55	07·72
	10	23·73	11	549·5			23 14	0	24·08	2	532·2	3	602·8	29 11	0	08·38
			12	546·4	13	692·9		10	24·22	12	529·7	13	593·7		25	12·38
	15	23·81	16	538·2				25	18·60	27	527·2	28	582·2		40	14·48
			17	538·9	18	698·1		30	17·46	32	525·0	33	584·8		45	13·90
			19	540·0				35	16·25	37	527·3	38	585·6		50	14·73
	20	25·06	22	543·6	23	702·8		50	16·35	52	527·9	53	586·3		55	13·72
	25	22·74	27	542·4	28	711·6	23 15	0	16·89	2	522·6	3	584·6	29 12	0	13·46
	30	19·29	32	540·0	33	728·9	23 16	0	12·11	2	528·6	3	559·7		10	12·09
	35	16·36	37	534·3	38	751·6		7	10·09						20	12·72
	40	12·65	42	527·2	43	765·7		10	11·34	12	528·2	13	567·6		30	11·91
	45	08·01	47	538·4	48	764·3		15	11·07	17	529·7	18	569·4		40	09·57
	50	05·27	52	559·5	53	756·4		20	10·92						50	08·38
	55	08·68	57	560·5			23 17	0	13·10	2	516·4	3	601·2	29 13	0	08·05
23 4	0	13·00	2	556·1	3	746·8									10	05·92
			7	558·1	8	739·7	24 6	0	25 16·65	2	542·2	3	641·2		20	05·79
	10	16·86	12	552·0	13	735·8		20	14·77	22	537·5	23	654·5		30	06·76
	15	18·55	17	535·0	18	730·8		30	13·79	32	536·0	33	658·5		40	06·12
	25	19·05	27	556·6	28	725·8	24 7	0	13·49	2	541·4	3	670·2		50	05·15
	45	20·72	47	557·6	48	726·0		50	10·77	52	543·1			29 14	0	13·67
23 5	0	22·94	2	555·4	3	734·2	24 8	0	12·20	2	535·4	3	684·5		5	18·08
	10	24·08	12	569·4	13	733·7	24 9	0	14·89	2	535·8	3	662·9		10	20·69
	15	25·43	16	564·6				25	10·33	27	535·4	28	640·6		15	21·68
			17	561·1	18	746·5		30	08·29	32	539·3	33	634·6		20	20·42
			19	556·9				35	11·24	37	534·2	38	634·5		25	18·16
	20	23·45	22	549·2	23	765·0		40	12·36	42	525·6				30	16·08
			24	545·0				45	13·88	47	521·2	48	631·9		35	13·07
	25	15·56						50	15·27	52	515·2				40	10·13
	26	16·99	27	559·4	28	793·0		55	13·61	57	513·9	58	627·3		45	07·65
			29	568·1			24 10	0	09·64	2	515·9	3	619·3		50	06·74
	30	11·72						5	05·94	7	523·1	8	608·2		55	06·14
	31	08·58	32	566·6	33	836·8		10	06·64	12	527·1	13	597·8	29 15	0	06·19
	33	03·40	34	571·0				15	09·32	17	524·9	18	592·9		5	05·45
	35	02·06			36½	829·3		20	11·46	22	520·5	23	594·0		11	04·44
	36	25 02·89	37	570·1	38	821·0		25	11·57	27	516·1	28	596·9		15	04·64
			39	578·1	39½	809·9		40	08·08	42	526·6	43	601·9		20	03·23
	40	24 56·37			40½	802·2		55	12·16	57	529·2	58	605·7			
	41	24 56·65			41½	798·0	24 11	0	12·89	2	529·1	3	605·7		25	03·65
			42	588·6	43	789·4										
			44	591·9	45	775·2	26 12	0	25 12·69	2	535·5	3	617·2		30	05·52
	45	25 00·51	47	589·1	48	774·3		30	15·88	32	531·8	33	615·2			
			49	581·9			26 13	0	14·94	2	528·5	3	611·2		35	07·27
	50	08·26			51	777·0	26 14	0	16·46	2	526·3	3	618·5			
			52	576·2	53	776·8		10	20·23	12	525·5	13	620·4		40	10·61
			54	571·0				15	21·84							
	55	13·41	57	561·3	58	773·0		21	22·58	22	523·9	23	619·2		45	13·79
23 6	0	14·03	2	546·7	3	770·6		25	23·38							
	5	17·39	7	560·7	8	764·9		30	23·22	32	526·0	33	615·9		50	15·49
	10	19·86	12	535·5	13	762·9		35	23·19						55	17·70
	15	19·96	17	530·0	18	757·7	26 15	0	18·84	2	530·1	3	608·8	29 16	0	18·13

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

Aug. 23ᵈ 5ʰ 20ᵐ—30ᵐ. Declination magnet vibrating 4′, bifilar magnet 12—20 div.
Aug. 24ᵈ 4ʰ. Clock 12ˢ slow; put right.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
17	529·3	18	611·0	29 16	10	25 18·85	12	525·3	13	512·8	9 12	20	25 17·36	22	532·4	23	623·5
2	529·2	3	626·1		30	14·31	32	529·3	33	536·9		25	18·32	27	532·7	28	620·9
					50	13·56	52	526·2	53	555·6		30	19·02	32	533·7	33	616·2
2	528·8	3	692·6	29 17	0	12·16	2	532·3	3	564·1		35	19·96	37	536·5	38	611·3
22	536·1	23	671·2		10	12·45	12	533·1	13	567·4		40	21·66	42	537·0	43	605·4
27	540·7	28	662·8	29 18	0	09·86	2	533·6	3	606·5		45	22·17	47	536·6	48	597·2
32	547·1	33	648·6		15	13·23	17	531·4	18	610·0		50	22·17	52	536·2	53	590·2
37	545·7	38	636·6	29 19	0	11·59	2	532·2	3	602·9		55	22·10	57	532·4	58	583·2
42	543·8	43	623·4	29 20	0	12·29	2	510·2	3	621·6	9 13	0	20·79	2	532·1	3	575·5
47	541·9	48	618·7		10	15·98	12	511·3	13	625·2		5	18·97	7	533·2	8	570·1
52	539·3	53	613·0		15	17·06	17	513·5				10	17·44	12	533·3	13	566·2
57	540·0	58	604·2		20	17·78	22	509·9	23	623·6		15	16·10	17	536·2	18	564·5
2	538·5	3	597·4		30	15·71	32	511·1				20	15·24	22	538·2	23	564·7
27	542·2	28	574·8		45	17·37	47	515·2	48	620·3		30	13·39	32	538·0	33	571·0
42	541·8	43	551·9	29 21	0	17·93	2	508·5	3	624·9		45	14·53	47	537·0	48	579·3
47	551·6	48	541·0								9 14	0	15·67	2	535·9	3	581·7
52	548·9	53	529·4	30 1	0	25 28·94	2	512·3	3	635·8							
57	544·2	58	523·1		30	31·43	32	506·7	33	648·5	14 4	0	25 21·63	2	536·0	3	648·2
2	535·7	3	522·2	30 2	0	28·02	2	526·5	3	652·7		5	20·94	7	534·3	8	649·4
12	530·6	13	532·3		30	26·77	32	533·5	33	654·0	14 5	0	18·88	2	529·3	3	662·3
22	536·4	23	535·4		40	27·19	42	537·6	43	658·3	14 7	0	11·91	2	537·5	3	673·0
32	532·6	33	537·8		45	26·23	47	530·1	48	661·6		40	07·44	42	535·1	43	672·1
42	527·2	43	539·0	30 3	0	25·73	2	531·9	3	664·3	14 8	0	08·68	2	545·8	3	663·0
52	526·0			30 4	0	21·51	2	554·1	3	662·2		30	11·37	32	514·2		
2	528·8	3	528·8		30	22·40	32	539·2	33	679·3	14 9	0	17·33	2	542·8	3	641·8
12	531·0	13	522·8		45	19·86	47	533·8	48	680·8							
22	520·1	23	524·8				52	547·1	53	682·1	16 12	0	25 14·17	2	541·3	3	601·9
32	521·3	33	526·6	30 5	0	18·87	2	533·8	3	688·8		15	11·32	17	534·2	18	598·8
42	525·0	43	529·4		30	17·31	32	553·6	33	680·5		20	09·98	22	533·5		
52	522·3	53	534·7		45	17·96	47	545·3	48	694·3		25	09·64	27	531·2		
2	520·5	3	539·9	30 6	0	16·30	2	546·9	3	702·6		30	08·82	32	528·2		
							52	549·0	53	728·4		35	08·08	37	526·7	38	598·6
12	528·7	13	520·8		55	12·31	57	543·7				40	08·72	42	526·3		
17	534·0	18	505·2	30 7	0	13·49	2	539·5	3	721·0		45	09·79				
22	533·6	23	488·7									46	11·27	47	525·6		
27	535·5	28	475·5	2 14	0	25 17·44	2	534·5	3	604·5				49	523·2		
32	532·0	33	462·4		10	15·59	12	533·6				50	14·30	52	522·8	53	593·6
37	529·0	38	446·2	2 15	0	12·63	2	525·5	3	618·6		55	15·74	57	528·6	58	584·8
42	528·0	43	434·3								16 13	0	14·75	2	540·1	3	572·0
47	527·3	48	433·8	4 10	0	25 13·96	2	540·6	3	573·6		5	12·26	7	546·2	8	560·9
52	530·0	53	438·0		11	18·05	12	534·0	13	571·7		10	11·54	12	551·1	13	553·5
57	531·3	58	443·9		15	18·60	17	527·6	18	574·1		15	11·79	17	550·8		
2	529·7	3	446·9		20	17·20	22	523·4	23	579·6		20	11·49	22	549·3	23	546·0
					25	15·14	27	523·3	28	582·3		25	11·35	27	546·6	28	545·8
12	528·6	13	454·2		30	12·43	32	526·8	33	586·7		30	10·60	32	542·3		
17	523·4	18	458·9		35	12·02	37	529·6	38	590·6		35	10·07	37	538·6	38	543·9
22	509·4	23	466·6		40	12·11	42	529·9	43	595·9		40	09·33	42	535·7		
24	504·7				50	12·23	52	531·7	53	603·2		45	08·33	47	533·3		
27	498·6	28	478·6	4 11	0	13·56	2	532·7	3	608·2	16 14	0	06·97	2	528·2	3	548·9
29	494·4				40	16·72	42	533·5	43	620·2		15	06·06	17	540·8	18	557·2
32	490·6	33	490·7	4 12	0	16·86	2	533·3	3	620·1		30	06·59	32	524·3	33	562·7
34	488·5										16 15	0	08·08	2	526·6	3	576·4
37	493·2	38	510·7	7 12	0	25 12·38	2	533·5	3	585·4	16 16	0	12·08	2	533·1	3	591·4
39	498·1				20	10·72	22	536·0	23	594·9		30	13·37	32	535·3	33	599·1
42	500·4	43	528·7								16 17	0	12·15	2	535·4	3	601·3
44	496·1			9 7	0	25 08·52	2	531·8	3	662·2							
47	499·3	48	527·8		10	07·91	12	536·0	13	660·2	17 15	0	25 16·46	2	532·9	3	604·1
49	503·6				45	13·93	47	535·0	48	651·9		30	12·85	32	540·4	33	585·4
52	506·6	53	530·4	9 8	0	14·87	2	536·7	3	647·8		40	10·16	42	538·0	43	583·8
57	509·9	58	525·7									45	09·42	47	535·8	48	585·1
2	516·9	3	518·5	9 12	0	25 15·11	2	530·4	3	628·4		50	09·06	52	545·2	53	586·9

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Aug. 30d 7h 30m. Clock 5s slow; put right.
Sept. 2d 14h. A slight motion in the magnets at this time, and for some hours after, but the changes were small.
Sept. 16d 12h 45m. The declination seems to have been about 25° 07′ at 45½m.

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
17 15	55	25 08·73	57	535·1	58	587·0
17 16	0	08·73	2	534·3	3	589·5
	10	08·75	12	532·5	13	592·5
	35	10·38	37	531·1	38	597·9
17 17	0	11·79	2	532·0	3	601·1
19 13	0	25 12·89	2	535·8	3	608·1
	15	10·43	17	540·5	18	601·3
	20	10·45	22	539·0		
	30	10·90	32	532·4	33	603·2
19 14	0	11·42	2	539·6	3	586·3
	20	08·03	22	534·1	23	577·8
	30	07·44	32	529·0		
	45	08·75	47	521·0	48	577·0
19 15	0	10·38	2	513·5	3	567·2
	10	13·05	12	501·6	13	557·6
	15	15·47	17	498·8	18	551·2
	20	16·53	22	497·2	23	540·8
	25	18·13	27	504·5	28	535·1
	30	19·39	32	512·1	33	530·6
	35	20·09	37	520·5	38	525·1
	40	20·16	42	526·3	43	516·6
	45	18·72	47	535·5	48	507·8
	50	16·57	52	540·1	53	501·1
	55	14·51	57	536·7	58	502·2
19 16	0	10·16	2	538·1	3	506·7
	30	05·69	32	536·7	33	537·2
19 17	0	08·26	2	535·3	3	555·8
19 23	0	25 21·53	2	502·7	3	609·5
	20	24·89	22	502·4	23	613·6
	30	26·84	32	504·1	33	602·7
	46	28·49	47	502·1	48	612·5
	55	29·39	57	509·3		
20 0	0	29·53	2	507·9	3	612·1
	10	28·62	12	511·9	13	611·4
	20	28·53	22	511·9	23	610·2
20 1	0	23·24	2	516·7	3	609·8
	30	24·42	32	521·9	33	610·5
20 2	0	23·65	2	526·8	3	608·3
20 5	0	18·65	2	542·8	3	688·5
	10	18·74	12	537·6	13	698·3
	45	20·62	47	526·2	48	718·7
	50	19·71	52	527·9	53	714·5
	55	20·99	57	537·2	58	707·5
20 6	0	21·88	2	534·5	3	707·7
	5	21·76	7	527·6	8	705·3
	10	19·55	12	534·3	13	702·3
	15	18·84	17	536·7	18	699·6
	20	18·16	22	543·4	23	696·2
	25	19·37	27	545·5	28	694·4
	30	19·56	32	541·5	33	695·9
	35	18·58	37	537·3	38	698·6
	40	17·49	42	540·2	43	705·0
	45	17·42	47	534·9	48	716·7
	50	14·98	52	528·1	53	730·6
	55	10·90	57	533·7	58	732·2
20 7	0	07·42	2	532·7	3	734·1
	5	07·20	7	529·8	8	734·2
	10	06·66	12	532·7	13	738·7
	15	06·93	17	527·6	18	746·0

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
20 7	20	25 03·04	22	526·0	23	744·7
	25	25 01·86	27	528·3	28	743·2
	30	24 58·25	32	521·1		
	34	51·94				
	35	51·07				
	36	51·02	37	535·2		
	37	51·19			38	730·5
			39	534·8		
	40	52·53	42	533·3	43	716·3
	45	52·53	47	533·0		
	49	50·67				
	50	50·72	52	544·8		
	51	50·93			53	692·1
	55	24 54·18	57	550·0	58	682·1
20 8	0	25 00·82	2	537·3	3	677·9
	5	00·98	7	530·6	8	671·9
	10	01·59	12	536·3	13	662·2
	15	05·30	17	536·5	18	652·5
	20	09·19	22	529·1	23	647·3
	25	09·03	27	527·0	28	638·1
	30	07·37	32	539·3	33	627·6
	35	13·14	37	538·6	38	623·4
	40	21·01	42	520·6	43	625·0
	45	22·47	47	501·4	48	637·6
	50	16·70	52	498·7	53	653·3
	55	08·23	57	514·8	58	651·5
20 9	0	08·34	2	524·3	3	651·0
	5	10·92	7	524·5	8	652·1
	10	12·43	12	525·9		
	15	13·34	17	525·3	18	653·1
			27	535·8	28	647·2
	30	16·75	32	536·1		
	35	17·33	37	533·6	38	645·1
	45	16·01	47	525·7	48	646·6
20 10	0	14·28	2	529·9	3	647·8
20 11	0	22·87	2	535·0	3	587·4
	10	18·16	12	533·8	13	578·8
	15	15·85	17	534·8	18	580·1
	30	14·01	32	531·9	33	588·3
	40	16·92	42	535·6	43	593·5
	45	18·77	47	537·0	48	589·9
	50	19·34	52	537·8	53	586·8
	55	20·09	57	537·5	58	584·2
20 12	0	19·95	2	538·9	3	581·4
	15	18·23	17	532·9	18	581·1
	30	16·13	32	529·5	33	581·9
20 13	0	14·96	2	530·0	3	596·5
20 19	0	17·22	2	514·7	3	630·1
	30	19·51	32	521·4	33	631·4
20 20	0	16·36	2	526·7	3	631·9
21 9	0	25 10·30	2	534·9	3	649·1
	26	12·01	27	533·2	28	644·0
21 10	0	11·96	2	536·5	3	643·2
22 20	0	25 19·55	2	510·7	3	632·3
	10	21·57	12	513·1	13	632·4
	15	21·93	17	514·6		
	20	21·64	22	516·7	23	630·0
	30	20·65	32	522·4		
22 21	0	18·95	2	522·4	3	622·3

Gött. Mean Time.	Declination.	
d. h.	Min.	° ′
22 21	15	25 17·20
22 22	0	18·60
23 1	0	24·66
	15	21·44
	20	21·70
	25	20·96
23 2	0	19·64
	10	20·72
23 3	0	21·41
23 7	0	13·86
	15	11·41
	20	12·72
	25	13·44
	30	13·74
	35	12·06
	40	12·01
23 8	0	12·70
	35	16·59
23 9	0	16·23
24 8	0	25 10·72
	10	11·37
	20	13·50
	30	13·76
24 9	0	14·31
24 15	0	25 17·94
	10	19·04
	21	20·85
	25	20·79
	35	18·99
	40	18·34
24 16	0	17·22
25 8	0	25 13·23
	10	09·20
	15	08·77
	20	06·36
	25	02·37
	30	01·41
	35	02·22
	40	05·42
	45	07·47
	55	08·75
25 9	0	09·32
	15	09·96
25 10	0	25 10·03
25 11	0	24 59·06
	5	56·38
	10	55·96
	15	57·98
	20	24 59·39
	25	25 01·36
	30	01·92
	35	02·03
	40	02·69
	45	02·32
25 12	0	00·53
	5	00·22
	15	01·49
	25	04·15

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.		Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
17	524·8	18	621·7	25 12	30	25 00·15	32	505·1	33	490·9	26 0	10	25 25·02	12	518·4		
2	523·9	3	622·8		35	25 02·46	37	498·4	38	492·6		20	24·62	22	518·2		
2	523·4	3	635·8		40	25 00·10	42	500·0	43	497·5	26 1	0	23·65	2	534·4	3	609·5
17	521·2	18	641·2		45	24 58·58	47	499·7	48	495·7		31	27·84	32	542·0	33	617·9
22	527·5	23	641·7		50	24 59·32	52	503·9	53	493·0		35	28·04	37	540·0	38	619·9
27	530·2				55	25 00·33	57	507·9	58	492·6		40	28·01	42	540·7	43	623·0
2	530·6	3	643·8	25 13	0	03·58	2	509·2	3	488·2	26 2	0	27·48	2	529·8	3	629·2
12	537·8	13	643·3		5	07·51	7	500·5	8	484·9	26 3	0	25·26	2	534·5	3	630·6
2	535·5	3	650·0		10	09·56	12	492·0	13	477·4	26 4	0	14·64	2	527·8	3	766·0
2	532·9	3	645·7		15	09·59	17	494·2	18	478·5		5	11·28	7	525·2	8	767·9
17	543·3	18	644·5		20	12·82	22	499·4	23	488·3		10	09·74	12	523·9	13	760·9
22	543·5				25	17·81	27	497·6	28	487·3		15	14·17	17	523·8	18	754·6
27	542·5				30	21·97	32	493·2	33	478·8		20	18·05	22	540·0	23	745·8
32	542·0	33	645·2		35	24·43	37	491·2	38	463·5		25	20·11	27	549·5	28	745·3
37	542·5				40	26·47	42	489·8	43	439·6		30	21·70	32	552·0	33	756·2
					45	27·31	47	493·4	48	417·4		35	21·61	37	541·2	38	787·1
2	542·6	3	642·1		50	26·03	52	492·2	53	412·4				39	534·2		
37	538·4	38	636·6		55	21·66	57	507·4	58	407·1		40	16·84	42	532·1	43	799·9
2	537·4	3	635·8	25 14	0	20·55	2	515·6	3	415·0				44	537·8		
					10	17·93	12	530·4	13	422·6		45	15·47	47	544·2	48	797·2
2	537·3	3	623·1		15	16·65	17	533·6	18	426·0		50	17·02	52	546·9	53	795·6
12	542·8	13	621·8		25	15·56	27	538·7				55	19·02	57	549·0	58	796·4
22	540·3	23	621·0		45	15·39	47	527·1	48	432·0	26 5	0	18·50	2	564·1	3	785·3
32	539·4			25 15	0	14·64	2	524·4	3	434·2		5	23·21	7	561·9	8	790·3
2	538·1	3	617·0		30	14·98	32	531·7	33	429·1		10	23·92	12	559·1	13	801·1
				25 16	0	18·16	2	524·8	3	445·1		15	25·19	17	549·9	18	827·3
2	524·3	3	611·9	25 17	0	08·01	2	542·2	3	468·6		20	18·60	22	535·0	23	859·7
12	526·0	13	609·0		10	06·12	12	541·7	13	480·5				24	542·7		
22	525·8	23	606·8		20	07·11	22	539·0	23	493·9		25	09·17	27	553·0	28	833·7
27	527·1				30	08·28	32	541·6	33	499·7				29	556·3		
37	531·4	38	597·8		45	10·23	47	543·8	48	507·7		30	22·53				
42	530·3	43	596·1	25 18	0	09·49	2	540·5	3	512·7		31	24·72	32	556·0	33	857·5
2	527·9	3	594·4		15	12·45	17	535·3	18	526·0				34	549·4		
					30	12·89	32	536·9	33	535·1		35	25·83	37	550·7	38	929·5
2	538·0	3	640·3	25 19	0	16·15	2	538·6	3	538·6				39	544·2		
12	528·0	13	649·8		20	18·45	22	521·3	23	549·3		40	13·29			41	930·9
17	522·2	18	662·6		30	20·18	32	509·5	33	555·3		41	10·83	42	526·2	43	907·9
22	520·7	23	666·2		35	18·82	37	505·3	38	557·3				44	527·7		
27	530·8	28	666·6		40	19·64	42	501·8	43	559·3		45	06·44				
32	539·0	33	664·2		45	19·61	47	501·5	48	560·8		46	08·09	47	543·6	48	840·4
37	543·3	38	661·3		50	18·20	52	503·9	53	560·8				49	547·7		
42	539·9	43	658·1		55	15·27	57	510·4	58	557·6		50	16·05	52	551·1	53	817·9
47	538·5	48	653·7	25 20	0	14·17	2	515·6	3	558·6		55	20·08	57	548·8	58	809·0
57	534·3	58	644·1		10	15·89	12	522·1	13	564·6	26 6	0	19·88	2	550·2	3	800·8
2	529·6	3	643·9		20	18·14	22	524·3	23	569·9		5	19·58	7	539·6	8	800·3
17	527·3	18	639·5	25 21	0	18·47	2	533·0	3	577·3		10	18·97	12	536·5	13	806·8
2	525·2	3	639·4		10	22·72	12	523·3	13	582·5		15	19·82	17	537·2	18	828·6
2	533·9	3	583·3		15	23·38	17	518·8	18	582·0		20	19·98	22	523·7	23	861·7
7	531·2	8	578·2		20	21·17	22	518·6	23	579·5		25	06·53	27	536·0	28	841·5
12	529·2	13	572·9		25	21·03	27	518·8	28	580·3		30	04·08	32	537·0	33	820·8
17	521·8	18	563·5		30	20·82						35	05·18	37	536·0	38	808·7
22	516·4	23	553·9	25 22	0	20·08	2	514·7	3	588·5		40	03·23	42	542·5	43	792·9
27	514·1	28	544·2		10	18·16	12	513·6	13	592·5		45	08·14	47	547·9	48	780·7
32	514·3	33	534·5		15	17·61	17	512·1	18	594·5		50	11·71	52	544·1	53	775·4
37	514·9	38	525·0		20	20·72	22	517·9	23	594·4		55	11·10	57	543·7	58	780·1
42	514·6	43	520·2		25	21·37	27	516·6	28	595·4	26 7	0	01·34	2	544·2	3	756·7
47	513·8	48	517·1		30	20·85	32	518·8				5	02·35	7	557·8	8	711·0
2	517·8	3	506·6		35	20·70	37	515·8				10	15·52	12	543·8	13	710·1
7	520·9	8	504·2	25 23	0	22·17	2	511·5	3	596·7		15	18·45	17	527·1	18	714·4
17	520·6	18	499·9	26 0	0	26·63	2	510·6	3	597·1		20	15·12	22	527·8	23	712·4
27	508·3	28	492·0		5	24·22	7	517·0	8	598·4		25	13·32	27	535·0	28	699·9

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
26	7	30	25	18·07	32	524·7	33	689·4
		35		19·19	37	513·7	38	675·6
		40		20·18	42	512·7	43	702·4
		45		12·06	47	517·3	48	733·4
		50		05·18	52	522·2	53	728·3
		55		02·37	57	515·5		
26	8	0	25	00·20	2	506·5	3	719·1
		5	24	55·20				
		7		54·01	7	561·9	8	772·3
					9	555·0		
		10		55·70	11	534·7	11	774·8
					12	523·7	13	780·9
					14	515·8		
		15		38·48	15	520·2		
		16		40·49	16	525·6		
		17		42·66			17	705·8
		18		44·76	18	534·1		
		19		46·65				
		20		48·74	20	537·6		
		21		51·25			21	660·0
		22		53·31	22	538·7		
		23		55·40			23	652·4
		24		57·29	24	536·0		
		25		58·47	27	525·9	28	633·7
		30		57·19	32	520·7	33	628·9
		35		57·64	37	522·0	38	619·4
		40	24	58·82	42	530·0	43	618·2
		45	25	04·34	47	534·2	48	613·7
		50		11·64	52	513·1	53	619·5
		55		07·65	57	509·6	58	622·5
26	9	0		02·48	2	521·5	3	618·5
		5		05·33	7	528·4	8	614·3
		10		08·99	12	523·6		
		15		10·40	17	519·6	18	614·0
		20		10·36	22	514·0		
		25		08·56	27	519·8		
		30		08·73	32	523·3	33	610·9
		35		12·76	37	517·9	38	614·5
		40		12·04				
		45		09·20	47	517·3	48	613·5
26	10	0		11·39	2	521·3	3	604·3
26	11	0		11·82	2	522·7	3	591·1
		10		10·43	12	522·7	13	583·1
		20		09·79	22	515·8	23	577·2
		30		12·31	32	522·3	33	566·3
		35		15·41	37	522·2	38	555·8
		40		16·84	42	526·1	43	550·3
		45		16·84	47	528·6	48	549·7
		55		17·80	57	527·1	58	557·1
26	12	0		17·70	2	524·2	3	561·0
		10		16·26	12	525·5	13	568·3
		30		15·54	32	535·2	33	582·3
		35		18·11	37	533·3	38	585·7
		40		19·39	42	531·6	43	585·7
		50		19·73	52	529·7	53	586·2
26	13	0		18·43	2	528·8	3	589·7
		15		16·18	17	530·2	18	596·9
26	14	0		18·41	2	526·2	3	617·0
26	19	0		27·53	2	519·1	3	586·4
		20		28·79	22	508·4	23	590·1
		30		28·74	32	508·4		

Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
26	20	0	25	31·12	2	509·8	3	598·2
26	21	0		21·43	2	523·4	3	601·1
		10		20·33	12	529·9	13	607·6
26	22	0		21·66	2	510·2	3	638·8
		40		24·45	42	499·3	43	653·8
					47	496·3		
		50		24·66	52	494·4	53	657·6
		55		25·38	57	492·8		
26	23	0		26·90	2	493·1	3	665·2
		5		28·09	7	489·0		
		10		29·19	12	492·2	13	666·1
		15		29·36	17	489·4	18	659·9
		20		30·18	22	498·6		
		25		29·16	27	502·2	28	654·1
		30		27·28	32	504·2	33	650·1
		35		27·14	37	508·4		
		40		25·47	42	507·3		
27	0	0		25·36	2	514·1	3	639·7
27	3	0		20·20	2	520·4	3	646·3
					42	539·8	43	658·4
		45		16·99	47	540·7	48	661·2
27	4	0		19·44	2	538·7	3	673·4
					17	520·6	18	697·3
		20		14·73	22	531·0	23	699·6
		30		15·05	32	533·2	33	709·8
		40		15·85	42	538·2	43	716·5
27	5	0		18·18	2	540·4	3	711·0
27	6	0		10·40	2	546·7	3	719·2
		10		13·36	12	549·6	13	706·9
		15		14·84	17	546·2	18	702·3
		20		15·45	22	544·9	23	696·6
		55		12·18	57	529·8		
27	7	0		10·13	2	528·3	3	685·9
		10		09·13	12	532·3	13	685·1
		20		08·28	22	537·5	23	681·0
		30		10·48	32	538·4	33	675·5
		40		13·32	42	534·7	43	673·1
		50		14·60	52	530·0		
27	8	0		13·34	2	529·8	3	667·0
27	12	0		20·15	2	528·6	3	603·8
		15		18·77	17	529·5	18	592·0
		30		20·79	32	531·8	33	581·9
		40		21·46	42	529·1	43	577·2
		50		19·79	52	529·5	53	572·6
27	13	0		17·40	2	530·9	3	568·5
		20		13·52				
		41		16·25	42	530·4	43	578·1
		52		17·98				
27	14	0		20·38	2	529·8	3	579·8
		10		23·02	12	531·4	13	572·8
		15		23·39				
		20		22·94	22	534·3	23	560·2
		25		22·47	27	536·4	28	552·1
		35		21·41	37	533·1	38	547·6
		45		19·93	47	531·1		
27	15	0		17·74	2	530·6	3	537·6
27	16	0		16·89	2	530·1	3	532·6
		15		19·19				
		30		21·21	32	516·6	33	536·6
		40		21·68	42	515·1	43	537·1
		50		21·83	52	518·5	53	536·6

Gött. Mean Time.		Declination.		
d.	h.	Min.	°	′
27	17	0	25	22·47
		10		22·44
		20		21·90
		40		16·25
		50		15·41
27	18	0		14·51
28	6	0		06·95
		10		07·37
		16		09·94
		20		11·82
		30		12·09
		40		13·66
		50		15·99
28	7	0		17·44
29	13	0	25	11·35
		10		10·61
		20		08·92
		30		07·44
		40		09·22
		50		10·74
29	14	0		09·73
		10		10·14
		40		14·55
29	15	0		20·70
		10		20·53
		30		18·99
29	16	0		16·99
29	17	0		19·93
		10		21·37
		20		21·64
		30		23·49
		35		24·15
		40		24·26
		45		23·58
		50		24·37
		55		25·02
29	18	0		25·83
		5		26·77
		10		25·81
		15		25·51
		20		25·73
		25		26·28
		30		27·04
		35		27·21
		40		26·28
		45		25·17
		50		26·43
		55		25·60
29	19	0		23·86
		10		23·27
		20		21·54
		30		19·88
		40		19·66
		50		18·50
29	20	0		19·64
		10		22·51
		20		22·33
		30		22·20
29	21	0		18·43

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Sept. 27ᵈ 15ʰ—16ʰ. The declination was watched between 15ʰ and 16ʰ, and was always found to be about 25° 16′·5.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
2	517·0	3	532·1	30	2	0	25 20·82	2	533·7	3	692·5	30	15	25	25 07·34	27	547·8		
11	519·1	12	527·8					12	536·7	13	694·8			30	09·40	32	544·7	33	432·8
21	523·2	22	528·2					22	537·2	23	692·6			35	11·44	37	541·9	38	429·7
41	527·9	42	538·1			30	23·83	32	543·9	33	689·6			40	13·74	42	538·9	43	424·4
						40	25·60	42	544·8	43	688·2			45	14·77	47	537·9	48	417·3
2	534·3	3	561·2	30	3	0	29·37	2	545·1	3	702·8			50	16·45	52	539·1	53	413·7
						10	26·67	12	546·8	13	738·8			55	16·62	57	537·1	58	404·4
2	532·7	3	688·7					17	560·8	18	746·7	30	16	0	15·85	2	541·2	3	398·5
12	537·6	13	686·2			20	17·83	22	560·4	23	743·2			10	18·34	12	548·9	13	392·1
17	534·8	18	686·0			25	16·35	27	552·9					15	21·43	17	545·5	18	388·1
22	532·8	23	687·7					32	554·9	33	749·3			20	24·30	22	538·0	23	379·4
32	523·1	33	685·2			35	16·06	37	558·5					25	26·23	27	536·4	28	370·2
42	530·3	43	680·9			45	16·32	47	556·7	48	742·8			30	28·35	32	537·6	33	357·4
52	531·4	53	673·7	30	4	0	20·40	2	548·6	3	734·3			35	29·53	37	536·5	38	339·6
2	531·2	3	668·6			20	22·92	22	547·1	23	736·1			40	28·49	42	545·2	43	322·2
						48	06·70							45	24·89	47	547·2	48	317·2
2	511·6	3	407·1			50	01·78	52	561·3	53	787·8			50	23·31	52	545·7		
12	513·2	13	421·2			55	04·91	57	563·9					55	23·29	57	541·4	58	323·4
22	519·4	23	446·5	30	5	0	11·28	2	552·2	3	757·6	30	17	0	23·85	2	538·7	3	325·2
32	519·0	33	477·0					7	554·2	8	752·3			10	26·79	12	538·1	13	324·6
42	523·5	43	510·2			10	09·82	12	556·1	13	749·9			15	28·90	17	528·1		
52	525·3	53	527·9			15	15·89	17	546·9	18	748·2			20	30·81	22	524·1	23	318·8
2	524·0	3	531·9			20	18·94	22	537·0	23	747·4			25	32·94	27	524·6	28	315·2
12	522·0	13	535·8			25	18·95	27	533·1					30	34·03	32	529·9		
42	514·7	43	529·7			30	18·84	32	530·4	33	751·7			35	38·62	37	526·0		
2	523·3	3	554·5			35	16·62	37	536·0	38	750·5			40	42·76	42	521·4	43	313·2
12	522·9	13	560·3			40	18·08	42	533·3					45	46·31	47	521·7	48	304·0
32	525·7	33	569·0			45	18·57	47	532·3	48	752·1			50	45·04	52	518·0	53	292·8
2	526·1	3	565·9	30	6	0	18·97	2	534·6	3	742·1			55	43·58	57	514·3		
2	529·4	3	557·2	30	9	0	13·72	2	539·4	3	650·3	30	18	0	43·82	2	508·5	3	291·8
12	531·2	13	557·8			15	10·04	17	538·0	18	644·1			5	42·44	7	498·6	8	294·7
						25	13·30	27	533·7	28	644·4			10	41·67	12	483·6	13	302·7
31	524·9	32	559·4			40	16·95	42	531·2	43	640·2			15	44·06	17	467·9	18	299·8
37	522·7	38	558·2	30	10	0	18·07	2	529·2	3	634·2			20	48·00	22	468·7	23	288·8
42	520·1	43	558·7	30	13	0	18·90	2	525·0	3	599·6			25	46·24	27	480·9	28	295·8
47	519·7	48	559·5			5	23·01	7	519·7	8	592·2			30	44·59	32	490·5	33	302·5
52	516·9	53	561·4			10	25·68	12	512·7	13	576·0			35	42·48	37	491·8	38	308·8
						15	28·45	17	509·0	18	548·9			40	38·79	42	495·2	43	323·3
2	513·6	3	563·2			20	28·13	22	505·1	23	525·9			45	37·30	47	494·4	48	334·7
7	511·6	8	564·6			25	29·63	27	504·5	28	503·1			50	35·11	52	492·6	53	349·6
12	510·3					30	30·44	32	518·1	33	476·4			55	34·22	57	495·9	58	359·5
17	513·5	18	566·6			35	26·47	37	519·9	38	452·5	30	19	0	33·38	2	497·4	3	377·4
						40	25·27	42	512·4	43	426·6			5	35·46	7	495·6	8	385·4
27	519·3	28	570·9			45	21·04	47	514·3	48	410·1			10	35·06	12	491·6	13	396·3
32	521·9	33	570·4			50	16·65	52	516·2	53	400·6			15	31·68	17	498·3	18	404·5
						55	13·22	57	518·0	58	397·6			20	29·26	22	500·6	23	412·4
				30	14	0	10·33	2	518·8	3	396·4			25	28·15	27	505·0	28	423·6
47	529·5	48	568·9			5	09·05	7	514·5	8	394·9			30	27·88	32	497·7	33	433·6
52	526·6	53	568·5			10	07·54	12	515·9	43	402·2			35	28·32	37	493·9	38	443·2
57	524·8	58	566·4			15	06·14	17	520·3	18	411·2			40	28·11	42	493·8	43	453·7
2	528·1	3	565·3			20	07·15	22	516·4	23	415·0			45	29·10	47	492·6	48	461·8
12	519·0	13	570·4			25	07·45	27	516·6	28	420·9			50	29·53	52	495·9	53	469·4
22	511·0	23	577·7			30	08·21	32	523·1	33	425·0			55	30·57	57	494·2	58	479·2
32	518·9	33	582·2			35	11·34	37	514·2	38	420·9	30	20	0	31·72	2	495·7	3	486·3
42	519·4	43	591·1			40	12·33	42	513·5	43	434·2			5	31·95	7	494·8	8	492·4
52	526·2	53	596·6			55	10·09	57	520·8					10	32·91	12	488·6	13	499·0
2	527·0	3	602·6	30	15	0	07·11	2	537·1	3	429·3			15	31·06	17	489·0	18	504·7
12	525·6	13	606·2			5	05·90	7	543·3	8	429·4			20	29·03	22	490·8	23	509·7
22	521·0	23	607·5			10	06·56	12	546·6	13	431·0			25	28·62	27	491·1	28	517·4
32	519·9	33	611·4			15	06·86	17	545·6	18	433·3			30	27·62	32	495·3	33	520·8
2	522·2	3	614·5			20	06·79	22	544·6	23	433·7			36	27·82	37	492·9	38	523·6

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′
30 20	40	25 27·17	42	488·8	43	531·4	1 2	10	25 20·87	12	542·4	13	786·1	1 5	30	25 05·76
	45	23·75	47	494·1	48	536·1		15	21·79	17	538·7	18	778·1		34	07·84
	50	23·07						25	22·37	27	538·8	28	759·5		35	07·74
30 21	0	24·66	2	484·7	3	559·1		40	23·59	42	533·3	43	748·4		38	12·42
	5	22·75	7	477·3	8	566·9	1 3	0	24·22	2	538·8	3	748·0		40	12·31
	10	21·51	12	474·6	13	570·4		20	26·18	22	547·5	23	764·9			
	15	21·66	17	483·1	18	574·7		25	26·61	27	545·2	28	777·1		45	18·68
	20	22·42	22	480·3	23	582·4		30	25·90	32	546·9	33	791·2			
	25	18·38	27	494·9	28	582·7		35	23·41	37	555·1	38	799·0		50	19·71
	30	24·89	32	491·5	33	587·8		41	23·29	42	560·9	43	806·7			
	35	26·03	37	496·0	38	592·6		45	24·20	47	564·0	48	827·9			
	40	27·51	42	496·0	43	597·4		50	23·04	52	561·9	53	840·4		55	22·55
	45	27·59	47	493·9	48	603·4		55	21·19	57	566·5	58	888·1		56	19·56
	50	24·12	52	501·2	53	604·9				59	582·9			1 6	0	15·72
	55	26·28	57	502·4	58	607·4	1 4	0	14·23							
30 22	0	25·44	2	497·0	3	615·1		1	13·84	2	574·5	3	880·3		5	18·07
	5	24·82	7	497·5	8	625·2				4	584·0				10	18·85
	10	24·03	12	497·5	13	636·5		5	13·83	6	569·4				15	16·30
	15	23·12	17	498·3	18	647·4				7	566·7	8	877·4		20	10·50
	20	22·55	22	494·8	23	652·8				9	573·9				25	03·02
	25	21·77	27	498·6	28	653·2		10	15·24	11	578·9				30	25 03·27
	30	19·24	32	499·9	33	652·0				12	576·7	13	888·5		35	24 27·39
	35	19·58	37	495·0	38	654·8				14	573·4				40	24 41·55
	40	18·63	42	496·8	43	656·1		15	12·11						45	25 00·65
	45	17·65	47	500·1	48	665·8		16	10·65	17	576·7	18	888·3		50	13·20
	50	19·73	52	501·2	53	663·1		20	03·55	19	556·4				54	06·97
	55	23·54	57	490·6	58	664·0		21	25 01·12	22	543·2	23	883·8		55	03·50
30 23	0	24·15	2	483·6	3	668·5				24	563·6				56	03·63
	5	20·80	7	490·2	8	671·3		25	24 52·15						57	07·42
	10	19·37	12	501·1	13	671·2		26	46·97	27	585·1	28	898·0			
	15	20·35	17	497·7	18	675·0		28	42·50	29	596·0				59	18·40
	20	19·81	22	499·4	23	678·6		30	44·76	32	608·0	33	864·0	1 7	0	23·88
	31	20·08	32	507·4	33	690·2		31	48·51	34	592·7				1	23·31
1 0	0	21·26	2	511·9	3	679·5		35	49·54	37	591·4	38	829·7		2	16·18
			12	518·9	13	673·4		36	47·30	39	597·8				4	05·99
	15	22·87	17	518·8	18	677·3		40	55·02	42	579·7	41	819·1		5	03·28
	25	24·59	27	530·0	28	696·3		43	49·22	44	591·2				6	02·62
	30	21·24	32	519·4	33	728·4		45	51·09	46	601·2	46	803·7		7	03·45
	35	20·92	37	522·6	38	755·0				47	595·1				9	09·06
	40	23·81	42	527·9	43	784·9		48	24 57·51	49	585·7				10	13·16
	45	21·46	47	545·0	48	797·9		50	25 00·69	51	567·2	51	816·0		12	26·47
	50	22·85	52	566·8	53	810·3		53	25 01·68	52	556·2	53	823·5		13	33·41
	55	29·29	55	575·1						54	545·8				14	35·82
			57	562·9	57	833·1		55	24 58·06	56	562·0				15	34·79
	59	31·75	59	556·2	58	852·4				57	565·6	58	821·9			
1 1	0	29·90			1	888·6				59	569·8				17	29·68
			2	514·0	3	893·5	1 5	0	25 05·50	2	564·5	3	815·6			
	5	20·27						5	20·18	7	534·0	8	876·6		19	19·21
	6	19·26	7	540·4	8	878·6				9	543·2				20	14·77
			9	536·0				10	00·24							
	10	17·67	12	535·2	13	847·9		11	05·80	12	565·0	13	818·6		22	08·36
	15	17·15	17	539·0	18	824·7				14	558·3				23	07·00
	20	19·53	22	543·2	23	806·6		15	16·70						24	07·08
	25	21·59	27	527·7	28	798·8		16	20·05	17	553·8	18	852·4		25	07·15
	30	21·03	32	527·4	33	793·9		18	24·22	19	546·5				27	10·14
	35	22·13	37	531·2	38	792·9		20	18·16							
	45	22·53	47	545·5	48	792·7		21	25 11·49	22	547·6	23	928·3		29	13·50
	50	22·53	52	541·1	53	792·8		23	24 57·30						30	13·32
	55	25·56	57	533·3	58	799·9		24	24 58·32							
1 2	0	24·20	2	525·6	3	794·1		25	25 02·15	26	562·5	27	873·3		32	13·52
	5	20·08	7	539·6	8	789·4		29	07·34	28	556·6					

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Oct. 1ᵈ 6ʰ 35ᵐ. The declination magnet vibrating about 7′, the declination changing very rapidly; bifilar magnet vibrating about 11 divisions.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
31	559·0	32	888·5	1	7	35	25	10·48	37	521·3	38	695·2	2	6	41	25	02·01	41	542·1		
33	558·8					40		16·59	42	513·3	43	712·3			42	25	00·10	42½	541·9		
37	558·5	36	889·6			45		13·36	47	524·1	48	736·8			43	24	58·05			43	799·0
39	559·7	39	882·9			50		09·32	52	523·2	53	738·7			44		57·21	44	545·7		
42	573·8	43	896·7			55		11·34	57	524·4	58	764·7			45		56·35	45	553·3		
44	571·7			1	8	0		09·12	2	506·3	3	760·8			46		56·57	46	557·9		
47	559·4	48	898·8			5	25	02·64	5	493·2					47		56·34	47	560·6		
49	553·7								7	491·0	8	736·9						48	564·8	48	832·8
51	568·9					10	24	58·40	12	496·9	13	713·7			49		57·02	49	567·7		
52	570·7	53	918·2			15	24	58·76	17	500·6	18	699·9			50		57·44	50	563·2		
54	555·6					20	25	01·79	22	499·3	23	694·2						51	553·7	51	834·2
57	546·8	58	914·2			25	25	01·34	27	498·2	28	689·5			52		57·31	52	544·6		
59	546·4					30	24	59·70	32	497·7	33	684·9						53	539·2	53	823·8
2	545·9	3	899·6			35	25	00·04	37	500·7	38	683·6			54		56·67	54	538·0		
4	541·5					41		01·88	42	501·0	43	684·4			55		57·12	55	535·2		
7	541·3	8	893·7			45		01·39	47	498·0	48	676·6						56	532·0	56	807·0
12	544·4	13	900·0	1	9	0		02·87	2	499·7	3	636·8			57	24	58·74	57	528·9		
17	553·4	18	922·3			15		00·67	17	496·3	18	598·8						58	527·5	58	797·6
22	541·8	23	909·9			30		05·79	32	498·1	33	560·9						59	529·6		
27	532·9	28	837·4			35		03·72	37	501·7	38	562·0	2	7	0	25	01·83	0	530·6		
32	548·3	33	891·1			40	25	00·62	42	510·9	43	567·6						1	529·1		
37	586·2	38	778·0			45	24	59·53	47	520·8	48	554·5						2	526·7	3	773·3
42	588·9	43	699·5			50	25	03·45	52	504·7	53	510·3			5		04·48	7	528·0	8	754·4
47	585·4	48	665·1			55		11·81	57	498·6	58	473·8			10		07·25	12	521·4	13	750·1
52	548·5	53	667·9	1	10	0		15·11	2	496·3	3	460·7			15		08·21	17	522·4	18	747·9
54	540·0					5		16·36	7	484·2	8	418·9			20		10·03	22	522·3	23	749·1
55	544·9					10		17·87	12	473·8	13	398·6			25		11·61	27	515·0	28	763·8
56	553·6					15	25	16·01	17	441·1	18	390·4			30		14·87	32	519·3	33	758·3
57	558·7								19	454·4					35		16·55	37	522·7	38	752·3
58	556·9	58	635·1			20	24	59·86	21	468·2					40		15·01	42	536·2	43	750·0
59	550·0					24	24	57·42	22	478·1	23	391·5			45		12·20	47	526·2	48	747·1
0	535·5					25	24	58·20	27	475·1	28	367·7			50		20·11	52	517·3	53	743·7
1	516·5					30	25	05·15	32	491·1	33	360·4			55		18·11	57	520·0	58	734·5
2	507·2					31		06·53	34	490·8			2	8	0		17·29	2	523·0	3	725·5
3	507·9	3	648·3			35		08·95						*	15		17·67	17	528·8	18	701·9
5	517·7					36		09·20	37	483·3	38	390·4			25		17·13	27	531·7	28	690·9
7	534·5								39	484·4					40		18·21	42	534·7	43	678·3
8	543·2	8	611·9			40		05·82							50		18·00	52	538·7	53	673·0
9	548·9					41		04·84	42	487·9	43	421·2	2	9	0		17·12	2	529·3	3	677·4
11	551·6	11	586·4						44	491·8					30		16·80	32	534·7	33	668·6
12	535·5					45		02·25	47	498·7	48	439·7	2	10	0		15·44	2	536·2	3	655·3
		13	582·3			46		01·99	49	502·3			2	11	0		15·78	2	534·5	3	640·3
						50		01·78	52	501·2	53	460·4	2	12	0		14·91	2	527·0	3	627·6
15	504·3					55	25	00·03	57	517·1	58	490·1			10		18·57	12	528·9	13	620·4
16	493·2	16	618·6	1	11	0	24	59·10	2	533·5	3	511·8			15		20·13	17	531·7	18	616·1
17	488·1					5	25	06·53	7	526·5	8	521·8			20		21·53	22	528·9	23	609·5
18	487·3	18	653·9			10		09·05	12	524·7	13	543·5			25		20·77	27	529·7	28	603·7
19	488·0					15		09·71	17	527·5	18	554·5			40		18·30	42	532·3	43	587·5
20	493·9					20		11·75	22	526·5	23	564·9	2	13	0		13·83	2	531·6	3	574·8
21	502·9	21	695·8			25		12·87	27	525·4	28	571·0			30		18·13	32	529·1	33	588·0
22	509·9					30		13·32	32	527·4	33	573·7			45		14·84	47	532·8	48	586·5
		24	703·5			55		15·14	57	527·6	58	586·5	2	14	0		14·06	2	530·9	3	597·2
25	519·8			1	12	0		15·45	2	528·5	3	589·3			15		16·03	17	527·4	18	609·1
		26	694·9												30		16·68	32	530·7	33	609·2
27	521·5			2	6	0	25	15·91	2	546·1	3	681·8			45		16·35	47	529·0	48	611·6
28	519·8	28	688·4			15		14·03	17	527·6	18	707·0	2	15	0		16·28	2	531·3	3	614·1
29	517·5					20		14·17	22	519·8	23	722·4	2	16	0		18·05	2	533·6	3	611·2
30	516·3					25		12·69	27	526·0	28	742·0			20		14·15				
31	515·0	31	688·8			30		10·85	32	526·3	33	761·2			38		14·67				
32	514·8					35		08·45	37	533·1	38	761·2	2	17	0		14·77	2	533·7	3	621·8
33	513·8	33	694·8			40		02·08	40	535·7											

BIFILAR. k=0·000140. BALANCE. k=0·0000085.

Oct. 2d 6h 39½m. The bifilar magnet commenced to vibrate about 15 divisions; 42m the declination magnet vibrating 7′.
* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
3 2	0	25 27·22	2	527·6	3	644·9
	20	29·21	22	539·0	23	647·7
	25	29·57			28	651·0
	30	28·92	32	529·6	33	654·4
	35	28·11	37	519·1	38	659·4
	40	27·08	42	513·5	43	659·1
	45	27·22	47	520·1		
	50	25·31	52	520·4	53	661·0
3 3	0	21·57	2	519·8	3	664·7
	10	19·76	12	525·7	13	664·8
	15	20·65	17	528·9		
	25	22·13	27	533·8	28	661·6
	35	22·47	37	530·9		
3 4	0	21·27	2	533·2	3	660·8
4 10	0	25 11·21	2	533·0	3	625·3
	20	12·73	22	531·6	23	628·1
4 11	0	14·57	2	529·4	3	631·3
4 12	0	14·82	2	542·0	3	600·1
	10	14·77	12	540·5	13	599·8
4 13	0	11·99	2	531·0	3	608·7
5 9	0	25 08·56	2	538·0	3	639·2
	10	07·31	12	544·2	13	636·2
*	15	09·12	17	514·3		
	30	11·17	32	531·2	33	634·8
	35	09·29	37	529·6		
	40	08·41				
	50	09·89	52	530·0	53	639·6
5 10	0	10·13	2	526·3	3	639·4
	10	11·52	12	525·6	13	642·0
	25	13·84	27	526·9	28	643·4
	35	13·46	37	535·2	38	637·7
5 11	0	13·74	2	530·1	3	637·3
7 10	0	25 09·69	2	542·0	3	625·7
	15	09·91	17	541·6	18	621·1
	30	11·93	32	532·0	33	629·0
	40	09·17	42	548·7	43	619·5
	45	10·48	47	555·8	48	615·2
	50	11·68	52	556·2	53	612·2
	55	12·25	57	551·3	58	609·5
7 11	0	12·35	2	543·5	3	610·5
	15	12·29	17	536·3	18	611·6
	30	13·43	32	536·9	33	608·3
	45	12·40	47	534·0	48	606·7
7 12	0	09·12	2	533·4	3	606·3
8 14	0	25 11·55	2	532·9	3	629·7
	30	15·14	32	530·8		
8 15	0	15·02	2	534·9	3	623·3
13 13	0	25 09·71	2	543·2	3	606·0
	15	09·82	17	543·8		
13 14	0	10·38	2	536·0	3	606·0
16 14	0	25 16·26	2	540·1	3	587·3
	10	14·57	12	539·1	13	585·8
	15	11·20	17	537·4	18	586·8
16 15	0	13·17	2	537·7	3	587·5

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
19 10	0	25 12·72	2	548·5	3	617·5
	15	11·30	17	540·9	18	619·0
	30	11·12	32	545·8		
19 11	0	12·16	2	548·6	3	609·4
	12	11·00	13	544·6	14	606·2
19 12	0	11·17	2	538·0	3	605·6
20 14	0	25 11·21	2	521·9	3	618·3
*	8	12·01	9	519·3	9	617·1
	14	21·54	16	523·9	17	590·9
	15	23·56	18	536·6		
	19	23·45	21	537·8	22	556·4
	20	22·53	23	532·8		
	26	21·64	27	532·3	28	515·8
			29	525·5		
	30	20·62	32	518·2	33	485·3
			34	515·9		
	35	20·58	37	510·2	38	462·1
			39	502·4		
	40	20·62	42	499·4	43	429·6
			44	504·6		
	45	19·14	47	497·9	48	402·6
			49	502·3		
	50	15·42	52	513·3	53	399·1
			54	510·8		
	55	14·94	57	509·1	58	391·6
20 15	0	14·71	2	507·0	3	389·9
	5	15·31	7	522·9	8	392·8
	11	15·71	12	512·1	13	381·9
			14	512·6		
	15	13·69	17	518·8	18	369·2
			19	525·7		
	20	13·77	22	520·3	23	356·6
			24	522·6		
	25	13·44	27	526·8	28	356·4
	30	14·50	32	533·4	33	359·3
			34	536·0		
	35	16·16	37	533·7	38	363·0
	40	18·87	42	542·9	43	355·6
			44	546·0		
	45	20·89	47	546·5	48	339·5
			49	543·0		
	50	19·41	52	553·7	53	327·1
			54	550·6		
	55	20·22	57	544·9	58	314·6
			59	544·7		
20 16	0	21·21	2	536·0	3	314·4
*	5	19·68	7	516·3	8	300·0
			9	505·2		
	10	16·57	11	487·6		
			12	481·7		
			13	472·3	13	291·5
			14	465·3		
	15	17·36	16	454·5		
			17	447·6		
			18	441·9	18	277·4
			19	435·7		
	20	23·34	21	431·0		
			22	426·2		
			23	429·7	23	251·1
			24	427·3		

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′
20 16	25	25 32·51
	30	34·54
	34	54·47
	38	48·91
	41	47·17
	44	43·89
	46	41·54
	50	37·67
	55	34·27
	59	26·47
20 17	0	25·16
*	5	23·98
	10	22·82
	15	25·29
	20	26·72
	25	29·72
	30	32·66
	35	33·48
	40	31·75
	45	30·27
	50	28·90
	55	27·26
20 18	0	28·01
*	5	26·60
	10	25·09
	15	26·00
	25	27·41
	30	30·76
	36	34·81
	40	36·17
	41	36·46
	45	37·77
	46	37·24
	50	36·63
	55	36·69
20 19	0	36·52
	5	34·54
	10	33·74
	15	33·00
	20	35·23
	25	30·67
	30	28·92
	35	26·11
	40	24·72
	45	27·17
	50	28·45

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Oct. 16^d. The copper ring removed from the declinometer; the readings in future are taken generally at the ends of the vibrations nearest to the usual seconds.

Oct. 16^d 14^h—21^d 2^h. Clock 22^s slow; set right at 21^d 2^h.

* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
26	421·7			20 19	55	25 24·72	57	512·2			21 2	55	25 13·39	57	535·7		
27	417·4			20 20	0	19·75	2	519·8	3	510·6	21 3	0	13·76	2	533·3	3	763·2
28	413·5	28	200·0		5	17·58	7	531·2	8	514·9		5	14·99	7	525·3	8	748·6
29	403·7				10	20·82	12	528·5	13	520·3		10	15·69	12	536·2	13	741·3
31	386·3	31	213·9		15	20·18	17	523·4	18	522·5		15	13·29	17	543·5	18	734·6
32	393·4				20	20·15	22	522·0	23	525·8		20	20·11	22	534·8	23	729·1
33	405·1	33	223·2		25	19·68	27	520·2	28	530·2		25	19·78	27	538·0	28	723·0
					30	21·83	32	514·1	33	536·0		30	19·44	32	541·1	33	720·8
39	443·1				35	19·86	37	515·0	38	540·7		35	19·51	37	531·3	38	716·3
40	451·9	40	125·6		40	19·64	42	513·2	43	546·4		40	18·90	42	531·1	43	710·2
42	472·1				45	19·01	47	516·4	48	550·0		50	21·37	52	536·8	53	704·4
43	481·3	43	119·4		50	20·89	52	511·5	53	553·5	21 4	0	19·84	2	526·7	3	704·9
45	496·0				55	18·54	57	512·0	58	553·7		15	18·60	17	531·8	18	689·9
48	505·4	49	113·3	20 21	0	17·33	2	510·3	3	557·5		30	18·74	32	526·3	33	683·6
52	513·0	51	114·1		10	15·17	12	505·6	13	564·2	21 5	0	19·24	2	521·6	3	683·6
54	515·5				20	17·29	22	503·1	23	574·5		30	13·41	32	533·8	33	667·5
55	510·9	56	117·4		30	16·95	32	493·2	33	579·1		35	11·98	37	541·5	38	666·4
57	505·2	58	117·9		40	20·53	42	479·1	43	592·5		40	15·20	42	538·8	43	665·8
59	504·0				45	21·70	47	463·9	48	599·9		50	17·65	52	527·5	53	656·9
2	501·7	3	142·8		50	21·41	52	464·1	53	605·1	21 6	0	16·70	2	524·7	3	651·0
7	485·1	8	182·0		55	24·06	57	472·8	58	612·1		16	12·96	17	529·0	18	646·9
9	481·2			20 22	0	22·69	2	468·8	3	625·4		20	13·00	22	526·1	23	647·8
12	487·1	13	206·0		5	22·03	7	483·4	8	637·2		30	12·46	32	532·0	33	646·2
17	481·1	18	213·7		10	24·42	12	484·4	13	655·7	21 7	0	07·31	2	530·1	3	638·2
22	480·9	23	224·9		15	22·50	17	489·2	18	677·2		5	25 03·70	7	528·4	8	635·8
24	475·1				20	19·26	22	495·3	23	682·9		10	24 58·42	12	544·7	13	629·7
27	462·3	28	232·5		25	21·41	27	495·1	28	671·6		15	25 02·39	17	546·5	18	632·1
29	463·5				30	28·08	32	486·2	33	662·6		20	04·64	22	544·1	23	632·4
32	454·5	33	226·2		34	28·87						25	08·48	27	536·0	28	633·1
34	452·2				35	29·64	37	486·2	38	658·6		31	09·15	32	530·4		
37	455·4	38	245·9		40	29·19	42	487·2	43	658·2	21 8	0	13·59	2	525·0	3	627·5
42	467·8	43	267·2		45	31·88					21 9	0	05·87	2	555·8	3	593·5
47	472·9	48	280·0		46	31·19	47	482·4	48	664·0		5	11·46	7	543·9	8	616·6
52	478·2	53	295·3		49	29·14						10	10·85	12	537·7	13	589·1
57	473·5	58	311·0		50	28·62	52	489·6	53	672·3		15	09·79	17	540·6	18	586·6
59	469·8				55	25·27	57	497·4	58	679·2		20	06·39	22	550·8	23	583·0
2	460·5	3	334·7	20 23	0	26·30	2	508·9	3	676·4		25	05·72	27	556·0	28	576·1
4	460·3				5	27·81	7	503·1	8	672·1		30	06·93	32	555·9	33	573·7
7	462·0	8	352·1		10	27·82	12	502·0	13	670·3		35	07·67	37	558·7	38	572·1
12	474·2	13	377·4		15	27·51	17	499·1	18	670·5		40	11·14	42	553·2	43	569·5
17	474·3	18	391·7		20	27·14	22	497·9	23	672·6		45	13·32	47	542·9	48	567·7
27	476·1	28	397·4		30	25·56	32	505·4	33	675·6	21 10	0	07·78	2	533·9	3	556·0
32	473·5	33	401·2		45	25·06	47	518·8	48	678·8		10	06·26	12	547·2	13	550·0
37	477·9	38	395·2	21 0	0	23·99	2	496·2	3	690·2		15	06·06	17	547·7	18	546·9
					15	23·78	17	510·7	18	686·3				27	539·2	28	545·9
42	480·2	43	396·1		30	24·30	32	496·2	33	691·8		36	09·82	37	518·2	38	547·6
					46	29·03	48	523·9	49	682·1		40	07·54	42	520·3	43	546·6
47	483·2	48	401·4		55	31·21	57	521·5	58	683·7		45	06·90	47	527·4	48	544·7
52	494·9	53	412·8	21 1	0	31·36	2	519·6	3	685·2	21 11	0	06·03	2	535·7	3	539·7
57	499·2	58	424·0		10	28·29	12	526·9	13	692·9		30	04·76	32	527·7	33	532·7
2	503·1	3	438·4		25	22·11	27	523·4	28	708·8	21 12	0	07·67	2	525·3	3	549·0
7	506·7	8	450·1		30	25·98	32	520·8			21 16	0	16·92	2	527·2	3	542·3
12	507·8	13	461·5		40	27·28	42	523·7	43	713·0		30	15·39	32	527·6	33	503·8
17	513·1	18	466·9	21 2	0	25·11	2	532·6	3	714·4	21 17	0	15·47	2	532·1	3	561·5
22	524·9	23	465·7		20	29·53	22	537·0	23	738·1							
27	527·8	28	467·9		31	28·85	32	530·6	33	771·9	22 4	0	25 11·41	2	534·8	3	653·2
32	526·0	33	472·2		35	24·75	37	514·9	38	795·3		20	14·87	22	534·0	23	646·1
37	522·2	38	479·6		40	20·45	42	520·3	43	788·9		45	16·39	47	533·5	48	633·3
42	529·2	43	484·5		45	12·89	47	535·7	48	785·5	22 5	0	15·85	2	532·0	3	630·2
47	532·9	48	493·4		49	12·69					22 15	0	18·87	2	533·4	3	575·8
52	524·9	53	503·4		50	12·58	52	538·9	53	773·8		31	13·64	32	528·8	33	569·9

Bifilar. $k=0·000140$. Balance. $k=0·0000085$.

Gött. Mean Time. d. h.	Declination. Min.	°	′	Bifilar Corrected. Min.	Sc. Div.	Balance Corrected. Min.	Mic. Div.
22 16	0	25	16·18	2	528·3	3	577·6
24 10	0	25	13·30	2	532·2	3	611·1
	10		08·32	12	531·9	13	610·2
	15		07·37	17	534·1	18	611·7
	25		10·23	27	522·7	28	613·8
	30		11·34				
24 11	0		07·18	2	530·6	3	602·9
24 21	0		20·89	2	513·5	3	612·1
	15		22·47	17	511·9	18	613·9
	25		23·66				
24 22	0		25·93	2	513·2	3	610·7
	30		25·26	31	513·1		
24 23	0		24·32	2	512·0	3	614·4
25 8	0	25	12·29	2	512·8	3	649·6
	10		08·11	12	503·1	13	659·5
	15		05·80	17	496·5	18	667·8
	20	25	01·31	22	496·2	23	679·4
	25	24	57·98	27	479·2	28	678·3
	30		53·69	32	493·2	33	688·7
	35		44·50				
	37		43·03	37	494·9	38	701·9
	38		41·85				
	39		40·74				
	40		39·29				
	41		37·87	41	500·3		
	42		37·10			42	697·5
	43		37·15	43	508·2		
	44		37·02			44	697·6
	45		35·96	45	509·6		
	46		35·96				
	47		35·43	47	518·1		
	48		35·47			48	698·2
	49		35·72	49	518·8		
	50		36·14				
	51		36·86	51	516·6		
	52		37·24				
	53		37·13			53	684·2
	54		37·96	54	523·1		
	55		37·79	55	523·5		
	56		38·95			56	674·9
	57		40·54	57	519·3		
						58	672·7
25 9	0		42·42	2	519·7	3	667·0
	5		46·25	7	516·5	8	656·3
	10		47·32	12	514·1	13	661·3
	15		48·56	17	512·2	18	654·3
	20		50·38	22	512·8	23	648·4
	25		52·57	27	516·0	28	641·6
	30	24	55·86	32	519·0	33	637·6
	40	25	01·83	42	517·2	43	631·8
	50		04·24	52	519·7	53	625·3
25 10	0		05·92	2	519·5	3	616·2
	10		06·73	12	521·9	13	613·3
	30		09·02	32	524·2	33	608·9
25 11	0		07·67	2	527·7	3	571·3
	10		04·58	12	530·7	13	555·1
	15		04·91	17	529·4	18	553·8
	20	25	01·39	22	529·0	23	553·2
	30	24	54·75	32	531·7	33	553·2

Gött. Mean Time. d. h.	Declination. Min.	°	′	Bifilar Corrected. Min.	Sc. Div.	Balance Corrected. Min.	Mic. Div.
25 11	35	24	47·51	37	536·7	38	549·8
	40		46·80	42	536·4	43	548·0
	45		48·97	47	534·9	48	549·3
	50		51·05	52	525·4	53	547·7
	55		53·31	57	516·6	58	542·5
25 12	0		54·65	2	507·7	3	536·1
	5	24	57·71	7	499·5	8	536·1
	10	25	01·04	12	493·8	13	535·8
	15		05·83	17	491·9	18	530·7
	20		11·44	22	492·3	23	514·1
	25		13·16	27	492·7	28	480·7
	30		14·44	32	500·9	33	456·2
	35		16·12	37	504·2	38	441·8
	40		15·98	42	503·9	43	424·7
	45		13·61	47	510·7	48	416·1
	50		12·20	52	515·1	53	412·7
	55		10·77	57	518·9	58	412·4
25 13	0		08·86	2	519·0	3	418·3
	5		07·34	7	519·7	8	426·7
	10		05·58	12	519·6	13	439·2
	15		03·50	17	524·6	18	453·3
	20		03·02	22	528·4	23	465·7
	25		03·47	27	530·7	28	478·7
	30		05·08	32	530·5	33	488·6
	50		10·83	52	530·7	53	514·1
25 14	0		10·90	2	528·6	3	522·6
	30		12·06	32	533·0	33	549·3
25 15	0		06·36	2	533·0	3	544·8
	10		06·01	12	531·7	13	550·6
	20		09·24	22	530·4	23	553·2
25 16	0		15·74	2	526·9	3	564·3
	10		20·55	12	525·8	13	548·6
	15		24·55	17	522·7	18	544·1
	20		27·95	22	524·2	23	538·7
	25		29·86	27	526·5	28	533·7
	30		30·18	32	528·8	33	528·6
	35		31·16	37	527·9	38	524·1
	40		30·78	42	527·7	43	519·0
	45		29·41	47	530·6	48	515·2
	50		28·53	52	531·3	53	512·2
	55		26·75	57	533·3	58	509·3
25 17	0		25·33	2	529·1	3	504·6
	10		20·79	12	530·8	13	506·6
	20		15·67	22	536·1	23	513·4
	30		14·87	32	535·2	33	523·9
	40		13·12	42	535·1	43	528·5
25 18	0		12·45	2	544·2	3	545·6
	10		13·81	12	543·4	13	548·5
	20		15·89	22	540·0	23	552·3
	25		14·26	27	541·1	28	552·3
	30		17·13	32	540·3	33	554·5
	35		17·49				
25 19	0		17·13	2	531·5	3	564·1
	15		17·27	17	522·9	18	572·5
	30		17·86	32	521·0	33	579·1
	40		20·49	42	535·8	43	577·0
	50		23·95	52	534·9	53	574·2
25 20	0		23·34	2	531·7	3	571·6
	15		24·84	17	530·4	18	565·0
25 21	0		20·58	2	517·0	3	576·8
	15		20·85	17	512·0	18	583·2

Gött. Mean Time. d. h.	Declination. Min.	°	′
25 22	0	25	18·99
25 23	0		21·32
	5		21·23
	10		17·26
	15		20·70
	20		21·93
	25		21·66
	30		21·03
	35		20·77
	40		19·81
	45		19·71
26 0	0		19·81
	20		19·64
26 1	0		20·79
26 5	0		18·14
	10		06·70
	15		03·85
	20	25	02·32
	25	24	52·73
	30		44·07
	31		42·34
	32		41·38
	33		41·63
	34		41·75
	35		42·71
	36		44·43
	37		46·52
	40		51·67
	42		52·73
	45		52·60
	50	24	56·34
	55	25	01·56
26 6	0		04·21
	5		03·40
	10		04·75
	15		08·45
	20		12·85
	30		15·67
	40		17·22
	50		16·93
26 7	0		15·72
26 8	0		15·04
	10	25	12·45
	28	24	53·95
	30		53·95
	32		54·89
	35		55·33
	38		55·26
	40		54·79
	45		53·56
	50		54·55
	55		50·63
26 9	0		51·84
	5		55·33
	10		56·61

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Oct. 24ᵈ 10ʰ. For observations before this time, see *Term-Day Observations*.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
2	515·6	3	586·2	26 9	15	24 58·58	17	508·1	18	592·4	29 16	34	25 15·41				
2	477·7	3	614·7		20	24 58·20	22	511·5	23	594·0	29 17	0	15·18	2	535·6	3	595·0
7	475·6	8	621·4		25	24 58·85	27	515·0	28	592·4							
11	493·7						37	508·9	38	591·4	30 13	0	25 16·92	2	541·5	3	598·6
12	505·0	13	623·3		40	25 05·08	42	497·5	43	596·9		15	15·81	17	538·2		
13	510·3				45	03·88	47	504·1	48	598·0	30 14	0	14·96	2	533·0	3	591·4
14	502·4				50	02·28	52	508·7	53	597·6		30	17·80	32	535·2	33	585·2
15	498·5				55	01·56	57	516·8	58	591·8	30 15	0	13·02	2	535·6	3	581·4
17	496·0	18	634·5	26 10	0	04·21	2	517·6	3	588·6							
22	498·6	23	638·0		23	10·20					31 7	0	25 17·06	2	527·1	3	626·4
27	503·7	28	638·1		25	10·94	27	567·1	28	484·1		15	16·05	17	534·3	18	627·2
32	508·7	33	635·3		30	12·67	32	544·2	33	467·9	31 8	0	13·69	2	536·0	3	616·3
37	512·2	38	633·2		35	16·38	37	547·9	38	460·0	31 9	0	17·67	2	520·7	3	576·8
42	520·3	43	631·3		40	20·56	42	539·8	43	468·0		10	08·01	12	535·7	13	582·2
47	520·6	48	629·5		45	24·60	47	521·4	48	459·2		20	10·68	22	536·3	23	587·8
2	525·7	3	621·7		50	25·11	52	500·8	53	462·2	31 10	0	09·67	2	532·1	3	598·2
22	523·7	23	716·8		55	18·92	57	491·9	58	473·3							
2	528·6	3	614·9				59	498·6			1 7	0	25 18·28	2	528·6	3	635·8
				26 11	0	07·27	2	510·4	3	476·0		10	17·61	12	527·9	13	638·7
2	524·4	3	694·5		5	04·98	7	521·0	8	478·0		30	10·60	32	532·3	33	642·6
12	532·2	13	702·0		10	04·68	12	526·7	13	487·0		40	09·82	42	537·5	43	640·3
17	530·1	18	701·2		15	04·14	17	532·0	18	493·1		55	12·06	57	535·2	58	633·9
22	525·4	23	697·2		20	06·05	22	532·7	23	499·8	1 8	0	11·55	2	532·7	3	635·3
27	534·0	28	696·7		25	08·19	27	527·8	28	505·4	1 11	0	05·52	2	541·3	3	593·4
					30	07·04	32	530·1	33	508·9		5	05·15	7	541·9	8	592·6
32	545·6				45	06·26	47	524·6	48	515·1		10	04·68	12	541·6	13	591·3
		33	687·3		50	03·37	52	528·1	53	516·9		26	05·85	27	534·6		
				26 12	0	03·70	2	531·2	3	525·9		50	09·53	51	527·1	52	593·4
					18	08·08	19	525·2	20	536·5	1 12	0	09·87	2	528·6	3	593·2
											1 15	0	16·12	2	531·0	3	600·4
36	562·2	37	682·0	27 14	0	25 09·62	2	525·5	3	550·3		30	14·33	31	534·5	33	594·8
38	562·9				15	12·22	17	524·2	18	560·4	1 16	0	11·03	2	531·7	3	593·7
					30	14·04	32	525·5	33	562·6		31	12·78	32	533·9	33	596·0
42	550·5	43	682·0	27 15	0	13·09	2	525·9	3	570·8	1 17	0	13·57	2	534·9	3	599·1
47	550·3	48	676·3	27 16	0	19·08	2	528·1	3	572·0							
52	547·9	53	673·2		15	16·13	17	531·0	18	572·1	2 6	0	25 17·89	2	524·2	3	620·6
57	532·4	58	672·7	27 17	0	15·96	2	532·5	3	578·1		20	13·46	22	537·8	23	622·3
2	523·9	3	670·6									35	14·55	37	543·6	38	622·4
7	527·0	8	665·6	28 12	0	25 12·98	2	518·8	3	577·8	2 7	0	16·55	2	538·8	3	623·0
12	535·5	13	660·4		10	12·76	12	527·6	13	574·5	2 10	0	04·88	2	530·8	3	598·7
17	536·7	18	658·0		25	12·72	27	531·2	28	574·3		5	25 02·15	7	533·4	8	598·6
22	534·1	23	656·3	28 13	0	14·15	2	536·9	3	583·3		10	24 59·68	12	540·0	13	597·3
32	526·8	33	648·1									15	24 58·32	17	543·2	18	594·4
42	529·4	43	640·1	29 8	0	25 07·76	2	534·5	3	621·2		20	24 58·82	22	544·2	23	591·0
52	531·2	53	633·8		10	04·88	11	555·8				25	25 01·01	27	548·3	28	586·3
2	532·9	3	630·8				12	556·2	13	609·9		30	03·77	32	549·7	33	583·0
2	534·6	3	624·9		15	08·56	17	552·3	18	608·4		35	03·87	37	556·6	38	578·2
10	530·6				20	09·53	22	557·3	23	602·3		40	05·05	42	558·4	43	576·8
29	567·5	30	596·6		25	10·03	27	556·7	28	597·6		45	06·77	47	559·9	48	574·7
31	568·9				30	12·69	32	538·8	33	597·4		50	11·32	52	555·4	53	572·9
32	568·4	33	594·7		35	08·29	37	535·0	38	594·2		55	14·94	57	546·4	58	572·3
34	563·7				40	05·89	42	535·8	43	592·9	2 11	0	15·81	2	537·7	3	572·9
37	555·4				45	06·32	47	531·5	48	593·7		10	14·73	12	528·5	13	572·3
		38	593·5		50	04·28	52	533·4	53	593·9		20	09·27	22	527·0	23	575·1
42	544·0	43	588·0		55	05·05	57	531·8				25	06·90				
47	542·6	48	584·6	29 9	0	05·40	2	533·0	3	598·3		30	03·97	32	530·2	33	576·1
52	532·4	53	584·5									40	01·65	42	532·3	43	575·8
57	534·3	58	580·5	29 15	0	25 18·60	2	526·4	3	602·3		50	03·57	52	533·1		
2	531·1	3	581·6		20	17·26	22	530·2	23	596·7	2 12	0	04·04	2	528·2	3	578·3
7	520·6	8	585·8		31	16·73						15	11·37	17	531·5	18	582·7
12	512·9	13	589·6	29 16	0	18·03	2	531·2	3	591·9		45	07·24	47	536·5	48	583·7

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
3 17	0	25 18·10	2	523·2	3	582·2
	10	17·61	11	526·2	12	579·3
3 18	0	16·82	2	532·0	3	578·6
3 19	0	16·25	2	535·1	3	584·8
	20	16·95	22	534·2	23	587·0
3 20	0	14·43	2	532·8	3	593·0
4 4	0	25 14·21	2	529·9	3	629·5
	15	14·17	17	541·8	18	633·6
	30	20·18	32	538·9	33	640·3
	40	19·96	42	532·8		
4 5	0	21·09	2	531·2	3	638·3
4 9	0	04·91	2	528·6	3	623·6
	10	03·45	12	525·1	13	625·5
	26	06·43	27	525·9	28	627·9
	45	12·11	47	533·9	48	617·8
4 10	0	08·86	2	529·2	3	616·0
	10	05·55	12	533·3	13	614·4
	20	06·01	22	534·2	23	612·1
	25	06·10	27	531·9	28	614·0
	30	05·56	32	530·3		
4 11	0	08·48	2	527·8	3	614·3
4 13	0	09·60	2	537·4	3	582·7
	10	07·17	11	533·8	12	581·3
	30	06·68	31	530·6	32	587·2
4 14	0	12·48	2	535·9	3	589·1
5 15	0	25 15·17	2	542·4	3	598·7
	15	15·65	17	536·3	18	597·2
5 16	0	13·25	2	534·6	3	597·0
11 5	0	25 21·54	2	522·2	3	663·1
	15	20·82	17	525·2	18	680·8
	25	18·37	27	514·6	28	695·6
	30	16·80	32	514·1	33	701·5
	35	15·15	37	518·0	38	704·1
	40	14·60	42	515·2	43	708·2
	45	13·02	47	522·3	48	706·2
	50	13·19	52	524·0	53	706·6
11 6	0	13·93	2	532·5	3	699·9
*	45	20·32	47	529·5	48	682·2
11 7	0	18·54	2	528·4	3	683·0
	15	15·14	17	526·2	18	692·4
	20	11·03	22	540·4	23	689·3
			24	542·1		
	25	25 02·99	27	541·4	28	686·9
	30	24 59·16	32	564·5	33	672·4
	35	24 53·93	37	583·6	38	650·2
			39	581·6		
	40	25 04·44	41	574·0		
			42	569·3	43	640·0
			44	564·2		
	45	09·66	47	557·0	48	634·0
	50	12·55	52	544·1	53	631·4
	55	13·90	57	532·8	58	630·9
11 8	0	13·29	2	523·2	3	636·5
*	5	11·07	7	521·6	8	637·5
	10	08·99	12	526·9	13	637·9
	15	08·68	17	527·7	18	640·8
	20	08·99	22	527·9	23	641·7
	25	10·54	27	528·4	28	643·0

Gött. Mean Time.	DECLINATION.		BIFILAR Corrected.		BALANCE Corrected.	
d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
11 8	50	25 06·29	52	530·5	53	658·0
11 9	0	06·50	2	531·1	3	663·1
	30	06·90	31	519·4	32	664·9
11 10	0	05·22	2	524·8	3	654·4
11 11	0	06·26	2	522·6	3	651·2
*	40	07·78	42	526·1	43	636·7
11 12	0	07·69	2	531·6	3	627·3
11 13	0	02·43	2	534·0	3	557·8
	10	05·79	12	533·4	13	558·5
	20	05·70	22	524·7		
	30	05·76	32	525·4	33	550·9
11 14	0	03·65	2	525·1	3	562·6
	30	08·45	32	528·7	33	580·7
11 15	0	13·05	2	524·9	3	597·3
12 4	0	25 21·03	2	528·0	3	647·4
	46	10·16	47	507·7	48	720·4
	50	06·95	52	513·7	53	724·7
	55	07·37	57	516·7	58	721·9
12 5	0	08·22	2	521·1	3	718·2
			12	528·9	13	714·5
	15	17·02	17	532·9	18	709·8
	21	21·53	22	531·0	23	709·2
	25	23·05	27	526·8	28	706·9
	30	22·57	32	522·8	33	702·6
	35	20·45	37	524·8	38	695·2
	40	20·25	42	525·9	43	691·4
	45	20·32	47	527·6	48	687·6
12 6	0	18·14	2	535·8	3	670·1
	32	16·48	33	537·7	34	652·7
12 7	0	15·52	2	538·5	3	642·4
12 12	0	09·26	2	530·4	3	624·2
	10	07·79	12	528·6	13	626·8
	45	14·38	47	539·7	48	609·6
	50	13·44	52	539·3	53	607·6
12 13	0	12·13	2	535·8	3	606·0
	10	10·43	12	532·9	13	606·6
*	30	11·57	32	530·3	33	609·5
12 14	0	13·77	2	530·7	3	616·1
13 8	0	25 08·75	2	532·4	3	622·8
	10	05·94	12	538·8	13	622·9
13 9	20	08·25	22	535·1	23	625·8
13 10*	0	12·43	2	535·5	3	621·9
15 15	0	25 08·45	2	533·0	3	601·7
	10	09·08	12	532·5	13	595·9
	15	09·87	17	533·7	18	606·0
15 16	0	14·48	2	541·3	3	602·2
15 21	0	21·46	2	519·6	3	613·3
	10	24·23	12	519·5	13	613·6
	15	24·45	17	518·7	18	609·9
	20	26·84	22	524·1	23	606·4
	25	29·14	27	517·3	28	605·7
	30	27·62	32	517·4	33	604·6
	35	29·32	37	523·1	38	599·7
	40	32·32	42	530·3	43	594·3
	45	30·58	47	529·0	48	589·9
	50	30·60	52	530·9	53	586·0
	55	28·72	57	539·7		
15 22	0	29·41	2	540·5	3	578·2

Gött. Mean Time.	DECLINATION.	
d. h.	Min.	° ′
15 22	5	25 27·51
	10	26·40
	20	25·00
	30	25·74
	45	22·60
15 23	0	21·43
	15	21·53
16 0	0	30·60
	7	31·58
	10	32·86
	15	31·52
	20	32·59
	25	26·45
	30	27·91
	35	32·71
	40	36·49
	45	36·94
	50	38·17
	55	37·65
16 1	0	37·50
	5	34·98
	10	31·79
	15	25·53
	20	20·53
	25	23·99
	30	27·41
	35	28·58
	40	30·84
	45	38·44
	46	39·66
	47	39·93
	48	40·19
	49	38·72
	50	36·83
	52	29·70
	54	28·99
	55	29·26
16 2	0	28·47
	5	20·22
	10	22·11
	15	21·73
	20	21·36
	25	25·54
	30	21·63
	35	26·87
	37	27·21
	40	25·96
	43	24·42

BIFILAR. k=0·000140. BALANCE. k=0·0000085.

Nov. 12d 4h—5h 0m. Magnet with short scale used in the declinometer.
Nov. 16d 1h 30m. Clock 6s fast; set right. Nov. 16d 1h 47m 50s. The declination was 25° 40′·26.
* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
7	533·2			16 2	45	25 23·34	47	549·4	48	754·5	16 4			11	553·0	11	1034·3
12	532·1	13	578·6				49	540·3				12	25 20·05	12	545·4		
22	535·3				50	21·61	51	535·5						13	535·8	13	1019·4
32	535·4	33	580·9				52	538·5				14	16·15	14	531·3		
47	528·3	48	588·0				54	539·0	54	754·8		15	17·39	15	534·0	15	997·2
2	521·8	3	596·8		55	23·27	57	542·1	58	754·9		16	20·79	16	536·5		
17	520·6	18	599·0	16 3	0	22·94	2	535·4	3	760·6		17	24·35	17	536·1	17	980·0
2	523·6	3	619·3		5	24·22	7	550·6	8	783·4		18	26·40	18	535·2		
8	529·4	9	626·8				9	560·4				19	25·93	19	536·3	19	986·6
12	526·1	13	639·2		10	23·98	10	556·6				20	25·06	20	534·3	20	989·8
14	522·8						11	550·2	11	848·7				21	527·5	21	993·1
17	525·7	18	653·1				12	554·9				22	19·64	22	520·7	22	991·7
19	524·4						13	557·3	13	886·3		23	16·72	23	523·5	23	979·7
22	524·3	23	671·7		14	13·93	14	555·4	14	908·1		24	17·42	24	529·8	24	962·9
26	507·5						15	554·7				25	21·01	25	536·8	25	948·1
27	509·7	28	670·7		16	06·39	16	562·8	16	949·4				26	542·6	26	939·9
28	514·6						17	565·0	17	965·0		27	30·98	27	542·0	27	940·6
32	519·5	33	669·0		18	05·72	18	570·9				28	31·34	28	536·3	28	952·9
37	522·0	38	673·6		19	25 05·62	19	565·7	19	981·5				29	527·8	29	976·2
42	539·0	43	678·5		20	24 57·31	20	559·8				30	18·63	30	526·7	30	982·6
47	544·0	48	694·7		21	24 56·50	21	560·4	21	973·3		31	16·08	31	527·4	31	972·8
52	540·3	53	713·2		22	24 57·75	22	565·2				32	15·81	32	530 7	32	968·3
57	545·0	58	748·9		23	25 05·45	23	569·4	23	946·1		33	18·37	33	527·7	33	953·9
2	548·0	3	798·1		24	07·57	24	567·9				34	20·05	34	522·6	34	947·5
7	537·1	8	798·7		25	11·37	25	558·7	25	932·0		35	20·85	35	520·9	35	939·9
12	514·0	13	800·6		26	11·69	26	557·7						36	520·0	36	935·3
17	509·3	18	780·2		27	11·88	27	556·3	28	940·3		37	21·53	37	519·7	37	932·9
22	519·7	23	755·7				29	550·2						38	522·1	38	929·4
27	522·2	28	740·2		30	08·05	31	538·2	31	946·8				39	524·1	39	931·4
32	520·8	33	736·4		32	00·33	32	533·7				40	20·99	40	527·2	40	931·9
37	526·9	38	726·8				33	531·8	33	936·9				41	529·9	41	933·5
42	535·0	43	726·1				34	529·1				42	21·46	42	535·2	42	933·7
					35	06·32	35	526·8						43	537·9	43	931·6
							36	527·7						44	543·8	44	933·8
47	525·2				37	04·37	37	526·5	37	905·9		45	22·84	45	551·3	45	940·4
		48	745·8		38	03·84	38	527·6						46	565·6	46	944·0
							39	531·7	39	888·8				47	563·1	47	952·0
					40	07·07	40	535·9	41	875·4				48	569·3	48	963·9
52	523·8						42	537·5	43	869·6				49	577·6	49	979·5
		53	756·4		44	14·38						50	28·04	50	584·8	50	998·0
					45	16·65	45	545·8						51	593·3	51	1019·9
57	531·3	58	767·2		47	20·15	47	547·1	48	869·9		52	30·42	52	603·0	52	1039·3
2	521·4	3	780·3				49	552·0				53	33·87	53	612·2	53	1069·1
7	528·9	8	765·8		50	25·29	51	557·9				54	34·24	54	610·8	54	1085·2
12	532·3	13	761·4		52	25·22	52	557·1				55	35·65	55	627·5	55	1108·7
17	534·3	18	752·8				53	554·7	53	930·9		56	29·88	56	639·0	56	1130·9
22	540·1	23	743·9		55	25·33	54½	572·5				57	26·57	57	641·8	57	1129·4
27	522·7	28	746·2				56	554·2	56	984·5		58	28·32	58	637·3	58	1090·0
29	533·6				57	19·44	57	551·0						59	631·0	59	1103·7
31	534·3						58	549·8	58	972·4	16 5	0	08·28	0	605·8	0	1098·5
32	547·8	33	738·3				59	549·2				1	02·62	1	557·0	1	1093·5
34	558·9			16 4	0	22·10	0	546·7				2	02·19	2	533·2	2	1075·9
36	556·1						1	545·6	1	971·3		3	04·82	3	516·3	3	1059·1
37	558·6						2	543·3				4	07·24	4	520·9	4	1039·5
38	561·0	38	738·4				3	542·6	3	971·2		5	09·96	5	522·9	5	1021·9
39	550·3				5	22·87	5	551·0				6	11·88	6	526·7	6	1006·1
40	543·8						6	554·9	6	986·1		7	14·64	7	529·0	7	996·1
41	551·4				7	21·46	7	559·3				8	18·61	8	535·7	8	990·2
42	551·5	42	750·7				8	568·4				9	20·89	9	536·7	9	993·3
43	550·8						9	568·6	9	989·9		10	23·81	10	538·7	10	998·2
44	552·0	44	752·4		10	27·24	10	561·5				11	25·22	11	539·6	11	1010·3

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Nov. 16^d 2^h 30^m. The bifilar reading had diminished a little since 29^m.

Nov. 16^d 3^h 54^m 30^s. The bifilar attained its greatest reading at 54^m 30^s, and immediately began to diminish. 4^h 57^m + The bifilar readings suddenly began to diminish at 57^m 35^s, and continued to diminish till 5^h 3^m 0^s.

Gött. Mean Time.		Declination.		Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
16	5	12	25 21·13	12	510·9	12	1021·4
		13	20·85	13	514·4	13	1037·6
		14	17·12	14	549·8	14	1049·1
				15	554·2	15	1055·7
				16	555·0	16	1062·6
		17	14·70	17	558·8	17	1070·5
				18	563·0	18	1080·3
		19	14·03	19	562·7	19	1093·3
		20	10·47	20	564·1	20	1100·0
		21	08·55	21	564·3	21	1095·9
		22	09·96	22	564·5	22	1084·8
				23	568·8	23	1077·4
				24	568·6	24	1076·3
		25	15·17	25	579·1	25	1067·1
				26	579·8	26	1058·4
		27	14·06	27	575·9	27	1058·5
				28	569·1	28	1063·6
		29	12·28	29	566·0	29	1069·7
		30	09·82	30	566·8	30	1076·3
				31	561·0	31	1074·9
		32	08·50	32	559·7	32	1052·5
				33	556·4	33	1043·1
		34	10·03	34	547·4	34	1033·2
		35	11·48	35	540·4	35	1023·3
				36	539·4	36	1007·3
		37	12·15	37	541·2	37	990·3
				38	543·4	38	993·7
		39	13·12	39	544·1	39	985·5
		40	14·46	40	551·3		
		41	16·21	41	552·4		
				42	555·4	42	981·7
		43	17·60	43	554·9		
				44	556·2	44	974·8
		45	19·76	45	558·9		
				46	560·8	46	972·5
		47	23·04	47	565·9		
				48	566·2	48	986·8
		49	26·34	49	566·7		
				50	563·7	50	1002·5
		51	27·95	51	559·0		
				52	552·0	52	1012·8
				53	555·5		
		54	23·48	54	563·6	54	1029·6
				55	566·3		
				56	570·9	56	1051·4
		57	20·05	57	574·4		
		58	18·20	58	582·5		
				59	585·0	59	1092·0
16	6	0	14·57	0	584·6		
				1	586·4	1	1110·5
				2	590·6	2	1112·5
		3	09·08	3	603·1		
				4	612·8	4	1123·2
		5	15·27	5	606·0		
				6	585·0	6	1113·6
		7	20·15	7	566·5		
				8	557·6	8	1101·3
		9	15·94	9	567·0		
				10	576·5	10	1111·0
		11	11·74	11	587·0		
				12	593·9	12	1126·5

Gött. Mean Time.		Declination.		Bifilar Corrected.		Balance Corrected.	
d.	h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
16	6	13	25 06·46	13	609·8		
		14	06·32	14	629·5		
		15	04·10	15	645·3	15	1183·5
		16	04·51	16	649·8	16	1175·2
		17	04·79	17	660·8	17	1171·8
		18	04·96	18	681·8	18	1127·7
		19	05·65			19	1103·3
		20	11·05				
		21	11·03	21	658·7	21	1075·1
		22	10·83	22	658·8	22	1090·5
		23	11·07	23	649·6	23	1104·5
		24	13·74	24	624·4	24	1102·0
		25	13·79	25	613·7	25	1110·0
		26	12·18	26¼	574·6	26	1120·7
		27	12·13	27	559·4	27	1124·5
		28	11·51	28	539·0	28	1115·4
		29	10·03	29	545·8	29	1098·0
		30	08·99	30	563·4	30	1105·1
		31	05·38	31	586·8	31	1122·7
		32	02·48	32	612·7	32	1139·6
		33	01·91	33	663·1	33	1166·8
		34	02·62	34	655·0	34	1196·5
		35	01·93	35	686·8	35	1207·2
		36	25 01·07	36	723·2	36	1214·6
		37	24 58·32			37	1173·5
		38	24 58·65	38	739·8	38	1134·5
		39	25 03·23	39	734·4	39	1069·1
		40	24 52·10	40	716·2	40	1026·5
		41	24 58·15	41	700·9	41	952·6
		42	25 06·73	42	650·3	42	883·7
		43	25 01·84	43	608·0	43	862·7
		44	24 51·09	44	562·3	44	836·8
		45	24 54·03	45	503·8	45	757·8
		46	25 01·27			46	736·8
		47	01·98	47	469·2	47	724·4
		48	05·72	48	455·3	48	734·0
		49	04·71	49	454·4	49	748·6
		50	25 00·75	50	460·8	50	760·0
		51	24 57·49	51	469·2	51	771·5
		52	51·12	52	479·7	52	774·1
		53	44·53	53	490·5	53	770·3
		54	42·64	54	496·6	54	754·7
		55	38·14	55	491·6	55	754·0
		56	35·83	56	487·0	56	758·2
		57	34·98	57	488·6	57	755·3
		58	33·77	58	494·7	58	754·3
		59	31·70	59	506·3	59	751·3
16	7	0	33·70	0	516·0	0	745·2
		1	36·12	1	518·3	1	731·9
		2	40·49	2	518·1	2	714·2
				3	517·4	3	697·5
		4	43·96	4	520·3	4	681·5
		5	48·23	5	523·3	5	663·6
				6	524·3	6	647·3
		7	21 57·14	7	525·1	7	627·0
		8	25 05·05	8	526·8	8	622·6
				9	525·5	9	635·0
		10	08·52	10	521·9	10	619·2
		11	06·53	11	516·0		
		12	09·19	12	510·5	12	656·0
				13	504·7		

Gött. Mean Time.		Declination.	
d.	h.	Min.	° ′
16	7	14	25 09·93
		16	12·78
		18	11·41
		20	25 06·36
		22	24 56·23
		24	51·16
		26	49·95
		28	50·31
		30	52·67
		32	24 55·49
		34	25 00·04
		36	06·73
		38	16·35
		40	33·33
		42	34·98
		44	24·25
		46	15·41
		48	09·84
		49	03·20
		50	02·39
		52	02·19
		54	00·44
		56	00·13
		58	25 00·20
16	8	0	24 59·03
		2	25 04·46
		4	10·70
		6	14·04
		8	14·73
		10	15·85
		12	12·78
		16	07·74
		18	06·79

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

Nov. 16ᵈ 6ʰ 20ᵐ. The torsion circle reading of the bifilar was changed from 110° 16′ to 109° 8′. 6ʰ 37ᵐ, 107° 33′. 6ʰ 46ᵐ, 109° 2′·5. All the observations have been reduced to the original circle reading. (See *Introduction*.)

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.		
Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′
14	500·4			16	8			
15	498·9	15	664·6					
16	495·1							
17	497·0	17	706·1			22	25	06·39
18	497·1							
19	500·3	19	739·6					
20	503·6					26		06·16
21	503·7	21	774·2			30		07·94
22	500·4					35		12·85
23	497·7	23	779·7			40	25	10·56
24	497·4					45	24	59·93
25	497·7	25	762·7					
26	496·6					47	25	02·28
27	496·6	27	746·2			48	24	58·15
28	498·1	29	737·5					
30	506·2					50		46·75
		31	727·5			51		38·55
32	508·9	33	716·4			52		51·93
34	521·2	34	716·9			53		55·68
36	527·2	36	724·3			54		55·22
38	520·9	38	710·3			55		50·16
39	514·0	39	700·2			56		50·92
40	502·5	40	697·0			57		44·76
41	494·9	41	712·1			58		42·61
42	492·5	42	744·3			59		41·00
43	491·2	43	777·4	16	9	0		40·91
44	496·5	44	795·9					
45	502·0	45	805·0			2		44·44
46	508·0	46	834·7			3		46·31
47	510·6	47	849·5					
		48	857·2			5		45·87
49	518·0	49	863·1					
		50	860·6			7		46·21
51	527·6	51	859·5			8		50·92
52	532·6	52	861·1					
53	534·6	53	864·6			10		48·47
54	538·3	54	867·0					
55	543·6	55	867·3			12		57·04
56	543·9	56	861·7					
57	539·4	57	849·8			14	24	59·06
58	530·4	58	837·7			16	25	03·54
59	528·3	59	825·4					
0	532·4	0	813·5					
1	534·8	1	798·9					
2	531·9	2	786·7					
3	530·0	3	774·2			21		06·59
		4	769·8					
5	527·8	5	769·8			23½		00·47
		6	778·4					
7	527·8	7	784·1			25		00·60
8	527·7	8	789·7			26		01·41
		9	796·0			27		02·50
10	528·1	10	802·5			28		04·04
11	536·1	11	813·0					
12	540·8	12	826·1			30		06·63
13	544·8	13	836·0					
14	552·3	14	848·1			32		10·33
15	555·3	15	860·2					
16	554·0	16	866·1					
17	553·9	17	870·4					
18	553·2	18	872·5			36		06·76

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
19	551·2	19	872·6	16	9				37	507·4	37	572·4
20	549·5	20	870·0			38	25	04·04	38	508·6		
		21	865·7						39	510·1	39	571·9
22	552·0	22	866·3			40		01·95	40	512·3		
23	553·5	23	865·1						41	514·1	41	566·9
24	552·3	24	863·4			42	25	00·57	42	514·6		
27	543·7	28	843·0						43	515·6	43	565·5
32	539·3	33	819·5			44	24	59·32	45	517·3	45	564·9
37	541·3	38	834·6			47		57·24	47	515·5	48	556·9
42	530·2	43	796·2			49		57·22			49	554·8
		45	784·4			50		57·34	50	518·0	50	551·6
46	535·9	46	783·0			52		56·65	52	519·9	52	549·8
47	535·3	47	779·4			55		57·31	55	522·1	55	540·3
48	545·2	48	783·8								56	519·8
49	559·8	49	790·0			57	24	59·66	57	521·4	57	515·7
50	576·4	50	786·0						58	520·3	58	508·3
51	579·2	51	746·5	16	10	0	25	00·53	0	517·3	0	510·0
52	557·3	52	683·0			2		01·07	2	510·3	2	505·6
53	533·0	53	663·4						3	507·2		
54	525·5	54	667·3			4		04·48	4	505·0		
55	527·6	55	663·7			5		04·37	5	500·5	5	505·2
56	524·8	56	663·2						6	496·9	6	517·0
57	522·5	57	660·4						7	495·4		
58	524·3	58	654·7						8	492·2		
59	525·4	59	642·6						9	490·9		
0	529·7	0	631·3			10		04·17	10	486·3	10	518·7
1	531·4	1	616·8						11	485·0	11	520·1
2	535·1	2	605·8			12		05·89	12	481·9	12	518·3
3	535·8	3	599·4						13	480·3		
4	534·7	4	599·2			14		06·86	14	476·8	14	513·8
5	538·6	5	601·6						15	474·6	15	513·8
6	547·4	6	607·3			16		09·35	16	470·8		
7	551·4	7	605·2						17	469·9	17	512·8
8	551·3	8	602·1						18	467·7		
9	548·6	9	602·9						19	471·1		
10	547·8					20		14·73	20	474·0		
11	546·7								21	477·7	21	496·7
12	543·3	12	597·3			22		18·94	22	478·6		
13	540·1								23	472·6	23	470·3
14	535·7					24		23·21	24	465·7	24	453·8
15	530·8	16	589·6						25	457·9	25	434·8
17	521·7	17	587·9			26		26·30	26	451·9	26	417·3
18	519·9	18	584·3						27	451·3	27	400·9
19	517·2	19	585·3			28		29·06	28	449·6	28	388·3
20	514·6	20	601·9			29		29·76	29	446·7	29	380·9
21	510·3	21	598·1						30	441·9	30	371·6
22	509·7	22	593·8						31	437·6	31	363·2
23	510·9	23	591·4		*	32		27·51	32	436·5	32	353·3
24	512·8	24	587·3						33	434·0	33	347·8
25	517·3					34		24·08	34	432·5	34	339·9
									35	427·2	35	335·2
27	526·1					36		24·82	36	432·0	36	328·8
28	527·4	28	583·8						37	433·2	37	325·8
29	527·2	29	578·0			38		27·61	38	432·3	38	321·0
		30	574·3						39	425·1	39	318·1
31	521·3	31	572·4			40		28·20	40	430·1	40	318·1
32	516·1	32	570·5						41	433·1		
33	509·4	33	570·5			42		27·24	42	428·6		
34	506·3	34	567·0						43	416·3	43	333·8
35	506·4					44		25·09	44	419·7	44	338·8
36	507·0								45	421·7	45	342·3

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

Nov. 16d 8h 50m + The bifilar reading attained a maximum at 50m 30s, it then diminished till 54m 40s, when it attained a minimum.

Nov. 16d 10h 43m. The reading of the bifilar was least at 43m 25s. At 58m 30s the bifilar reading, which had been steadily increasing, diminished for about 1m, and then increased.

* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Gött. Mean Time.	Declination.			Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
16 10	46	25	20·02	46	429·4	46	348·4
				47	431·6	47	353·3
	48		18·68	48	437·7		
				49	434·3	49	365·8
	50		15·01	50	428·5		
				51	418·1	51	368·1
	52		11·37	52	430·7		
				53	444·2	53	382·6
	54		10·36	54	456·3	54	392·3
				55	469·1		
	56		09·39	56	479·4	56	414·3
				57	488·5	57	428·1
	58		07·04	58	492·4	58	439·3
				59	483·0	59	454·8
16 11	0		02·69	0	487·8	0	464·9
*	1	25	00·27	1	494·1	1	478·3
	2	24	57·88	2	490·6	2	490·0
	3		56·10	3	498·1	3	496·4
	4		55·15	4	496·3	4	500·4
	5		52·87	5	500·2	5	502·4
	6		50·92	6	508·9	6	510·5
	7		48·83	7	519·3	7	513·1
	8		47·42	8	530·2	8	514·9
	9		47·76	9	541·8	9	515·8
	10		46·79	10	541·1	10	519·1
	11		45·20	11	541·1	11	519·1
	12		44·12	12	541·7		
	13		43·96	13	543·6		
				14	544·9	14	519·2
	15		44·73	15	547·0	15	514·7
	16		44·76	16	550·9	16	510·8
	17		46·55	17	554·6	17	506·6
	18		47·56	18	559·8	18	504·3
	19		48·77	19	559·4	19	500·9
	20		50·51	20	558·5	20	495·4
	21		53·54	21	558·1	21	491·6
	22		55·70	22	557·5	22	487·4
	24	24	59·66	24	551·8	24	481·5
	26	25	02·35	26	544·1	26	474·8
	28		03·70	28	536·1	28	469·4
	30		06·66	30	533·2	30	462·1
	32		08·75	32	531·9	32	452·6
	34		11·30	34	530·3	34	443·2
	36		14·67	36	526·8	36	440·8
	38		16·41	38	521·2	38	441·8
				40	520·9	40	443·4
	42		17·15	42	519·3	42	445·4
	44		16·77	44	515·7	44	447·0
	46		15·47	46	516·1	46	451·5
	48		15·74	48	515·8	48	452·5
	50		14·92	50	514·1	50	454·2
	52		13·52	52	514·4	52	456·4
	54		12·72	54	510·9	54	454·1
	56		12·62	56	507·6	56	452·8
	58		11·37	58	507·2	58	455·8
16 12	0		11·28	0	504·6	0	455·5
	2		10·40	2	502·1	2	456·4
	4		09·22	4	497·8		
	6		08·75	6	494·6	6	454·0
	8		08·34	8	489·6	8	453·8
	10		06·73	10	488·4	10	452·4

Gött. Mean Time.	Declination.			Bifilar Corrected.		Balance Corrected.	
d. h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
16 12	12	25	05·69	12	487·3	12	455·1
	14		04·21	14	488·7	14	456·7
	16		04·10	16	490·0	16	459·8
	18		04·04	18	490·7	18	464·5
				20	493·0		
	22		03·94	22	492·7	22	475·5
	24		03·09	24	488·6	24	475·9
	26		01·85	26	489·9	26	479·2
	28	25	00·94	28	491·6	28	484·7
	30	24	58·15	30	498·5	30	490·1
	32		57·91	32	493·2	32	491·9
	35		57·34	35	503·8	35	497·4
	36		57·34	36	504·4		
	38		57·61	38	503·3	38	494·7
	40	24	59·03	40	506·0	40	492·0
	42	25	00·17	42	504·1	42	491·1
	44		01·14	44	503·0	44	489·5
	46		01·41	46	503·4	46	489·3
16 12	48		03·97	48	503·1	48	486·1
17 1	30	25	21·50	31	527·5	32	676·3
				42	516·0	43	696·1
	45		18·77	47	514·8	48	698·6
17 2	45		17·09	47	512·8		
17 4	10		00·01	12	510·9	13	764·5
	40		03·38	41	543·4	42	724·2
17 10	25		07·40	27	566·8	28	587·6
	33		18·16	34	539·0		
17 14	0		16·21	2	529·9	3	599·5
	20		15·51	22	528·1	23	623·0
17 15	0		15·71	2	528·8	3	611·9
18 0	0	25	17·76	2	516·0	3	655·7
	15		19·14	17	528·3	18	652·6
	20		18·81	22	526·5	23	655·8
18 1	0		19·44	2	534·5	3	648·7
18 8	0	25	06·39	2	545·7	3	631·7
	10		08·21	12	544·3	13	631·8
	20		11·98	22	541·3		
	30	25	13·22	32	538·4	33	624·6
				42	530·9		
18 9	0	24	59·46	2	531·9	3	623·6
*	5		53·25	7	546·3	8	619·0
	10		46·39	12	576·5	13	605·8
	15		51·49	17	580·3	18	602·9
	20		56·40	22	570·0	23	602·5
	25		57·44	27	571·5	28	600·1
	30		57·07	32	569·7	33	596·0
	35		58·32	37	568·2	38	598·2
	40		58·96	42	541·3	43	599·3
	45	24	59·19	47	538·4		
	50	25	00·91	52	529·9	53	598·6
	55	24	59·59	57	535·4	58	593·3
18 10	0	25	02·53	2	536·5	3	593·9
	10		04·39	12	527·0	13	592·9
	20		04·58	22	514·5	23	597·4
	25		03·52	27	516·9		
	30		04·48	32	517·5	33	597·9
	40		07·40	42	514·7	43	595·1
	50		08·28	52	514·4	53	597·1

Gött. Mean Time.	Declination.		
d. h.	Min.	°	′
18 11	0	25	09·12
	15		11·37
18 12	0		12·78
18 15	0		15·83
	10		18·50
	15		19·98
	25		22·57
	30		23·09
	35		22·47
	40		21·46
	45		20·65
	50		21·06
	55		19·81
18 16	0		19·15
	10		18·81
18 17	0		15·07
	45		11·52
18 18	0		11·00
	10		12·28
18 19	0		14·73
19 7	0	25	05·72
	10		09·76
	20		12·48
19 8	0		11·77
20 9	0	25	09·76
	12		07·34
	31		03·57
	35		04·71
20 10	0		10·36
21 15	0	25	22·20
	11		19·10
	20		16·86
	40		12·75
21 16	0		10·41
	10		10·90
21 17	0		13·30
21 23	0	25	27·61
	10		29·21
	30		26·40
22 0	0		26·28
	20		26·57
	40		25·02
	45		26·74
	50		23·14
22 1	0		22·80
	15		22·40
	30		17·49
	35		21·06
	45		22·40
22 2	0		22·74
22 5	0		15·32
	10		12·67
	20		05·45
	25		02·99

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Nov. 17d 3h. The torsion circle of the bifilar turned from 109° 2′·5 to its original reading 110° 16′, which changed the scale reading 72 divisions.
Nov. 18d 16h—18h. The instruments were slightly disturbed.
* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers.*

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.		Declination.			Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.	d.	h.	Min.	°	′	Min.	Sc. Div.	Min.	Mic. Div.
2	521·3	3	600·6	22	5				29	531·8			22	7				37	528·3	37	970·9
17	526·0	18	601·9			30	25	04·10	32	535·1	33	690·9			38	24	43·69	38	525·1		
2	530·4	3	607·5			35		08·08	37	539·5	38	685·3			39		47·00	39	524·9	39	918·4
2	525·3	3	613·1			40		11·52	42	531·1	43	687·4			40		44·30	40	519·1		
12	521·2	13	613·4			50		17·36	42	528·0	53	690·8						41	513·7	41	899·9
17	519·2	18	612·1	22	6	0		20·08	2	526·4	3	692·2			42		42·04	42	510·7		
27	517·9	28	604·4			10		16·55	12	522·2	13	723·9						43	509·2	43	889·9
32	518·9	33	598·9			15		14·99	17	519·5	18	756·5			44		42·10	44	510·0		
37	521·4	38	590·8			20		07·51	22	522·7	23	756·6			45		42·58	45	512·2		
42	526·3	43	584·7			25		00·57	27	537·2					46		44·84	46	515·8		
47	529·8	48	580·0			30		02·73	32	552·2	33	784·9						47	517·1	47	864·6
52	528·0	53	574·9			35		05·58	36	572·8								48	515·1	48	839·2
57	528·6	58	569·0						37	596·4	38	864·6			49		47·10	49	514·3	51	819·5
2	528·8	3	565·7			40		01·09	41	599·3					52		52·21	52	510·8		
12	531·1	13	565·2						43	610·0								53	506·2	53	822·1
2	526·6	3	570·8						49	574·4					54		50·89	54	502·9	55	823·0
47	534·2	48	581·3			50	25	08·88	50	566·0					56		48·58			57	813·2
2	529·4	3	592·5						51	552·7					58		48·28	58	503·3	59	800·2
12	529·5	13	598·3						52	542·7	52	1003·5	22	8	0		48·97	0	496·4	1	788·2
2	528·6	3	607·1			53	24	59·98	54	529·6	54	987·6			2		48·53	2	494·2		
						55	24	57·95	55	525·1								3	490·6	3	774·2
2	543·1	3	645·0						56	547·3	56	978·4			4		46·11	4	491·1		
12	540·3	13	645·3			57	25	01·14	58	551·8	58	971·9								5	749·0
22	536·3	23	645·1						59	549·2					6		48·09	6	489·9	7	719·1
2	532·0	3	641·9	22	7	0		00·78	0	547·1								7	486·3		
									1	557·6	1	966·2						8	480·4		
2	527·4	3	641·2			2		05·92	2	566·2								9	475·8		
13	532·5	14	638·4						3	572·0	3	986·3			10		58·32	10	474·2		
32	532·7	33	639·7			4		08·75	4	576·0								11	478·6	11	691·7
						5		11·12	5	577·9	5	990·2			12		58·65	12	481·2		
2	529·1	3	642·6						6	577·3	6	991·2						13	482·1	13	703·0
						7		10·40	7	575·4					14		57·68	14	480·3		
2	538·1	3	592·1						8	571·9	8	1001·6						16	475·7	16	711·3
12	537·5	13	581·6			9		07·47	9	575·2					17		54·65	18	483·8	18	716·7
22	537·7	23	577·6			10		03·67	10	578·7					19		56·00	19	487·1		
41	536·2	42	573·7						11	567·0	11	982·1			21	24	57·32	21	487·5		
2	537·9	3	575·9			12		04·53	12	559·9								22	500·6	22	722·3
12	540·1								13	559·0	13	955·7			23	25	03·47	23	512·0		
2	538·2	3	578·9			14		10·40	14	553·8								24	572·7	24	689·5
						15		13·74	15	552·7					25	25	42·73				
2	507·3	3	612·8						16	547·7	16	947·9						26	344·3	26	604·9
12	510·5	13	607·3			17		19·24	17	537·2					27	25	58·24	27	290·0	26½	599·9
32	503·7	33	615·5						18	531·0	18	943·7						28	333·4	28	575·8
2	526·5	3	610·8			19		15·67	19	529·2					29	25	28·53	29	362·5		
12	530·4					20		13·83	20	523·1					30		20·82	30	386·1		
22	529·1	23	609·7						21	522·0	21	918·1						31	397·5	31	563·5
32	533·8	33	610·0			22		10·28	22	529·0					32		19·81	32	399·1		
42	548·4	43	617·8						23	531·7	23	927·9						33	423·4	33	562·0
47	533·5	48	621·9						24	531·1	24	934·5			34		15·61	34	436·8		
52	530·9	53	623·9			25		08·55	25	532·1								35	446·7	35	520·6
2	534·1	3	624·0						26	533·8	26	953·4			36		18·77	36	456·9		
17	528·8	18	622·6			27		04·95	27	536·5								37	462·2	37	502·7
32	528·2	33	622·6						28	545·3	28	979·7			38		19·35	38	464·8		
						29	25	00·74	29	556·5								39	458·2	39	493·1
47	530·7	48	624·3						30	570·4	30	1014·2			40		17·63	40	451·1		
2	534·9	3	625·8			31	24	56·94	31	577·2								41	447·4	41	510·8
2	514·1	3	671·4						32	569·4	32	1046·8			42		12·18	42	453·1		
12	520·7	13	698·5						33	560·4	33	1050·5						43	459·8	43	534·6
		19	716·3			34		52·46	34	551·4					44		08·43	44	463·6		
22	518·3	23	705·3						35	537·4	35	1032·7						45	470·2	45	559·4
27	529·5	28	696·7			36		44·74	36	530·8					46		03·60	46	483·8		

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Nov. 22ᵈ 8ʰ 24ᵐ. The bifilar reading suddenly attained a maximum at 24ᵐ 0ˢ, and immediately diminished with great rapidity till 27ᵐ.

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
22 8			47	499·8	47	583·1
	48	24 59·50	48	515·2		
			49	527·5	49	585·9
	50	25 00·27	50	532·1		
			51	529·7	51	578·9
	52	03·02	52	527·2		
			53	524·6	53	582·3
	54	05·25	54	523·0		
			55	522·8	55	593·1
	56	05·87	56	521·9	57	607·8
	58	05·85			59	619·9
22 9	0	06·04			1	631·2
	2	05·85	2	519·5	3	637·2
	4	05·35			7	649·2
	8	04·44				
	10	04·37				
	14	07·85	19	521·8	15	652·3
	25	09·86	27	518·9	28	653·3
	41	11·77	42	524·8	42	646·0
22 10	0	13·76	2	510·8	3	626·2
	11	25 02·35	12	528·0	12	615·8
	15	24 59·23	15	538·9		
			17	538·1	18	595·2
	20	25 02·05	22	536·5	23	571·4
			24	524·4		
	25	06·36			26	562·5
			27	517·0	28	559·3
	30	01·81	31	531·9		
			32	533·4	33	551·5
	34	25 00·03				
	35	24 58·82	36	543·5		
			37	547·8	38	546·0
			39	553·3		
	40	24 59·59			41	528·9
			42	551·4	43	514·3
			44	551·4		
	45	25 03·60				
	46	11·14	47	566·1	48	496·7
			49	562·5		
	50	16·77			51	479·1
			52	548·4	53	467·4
			54	542·0		
	55	21·16			56	451·5
			57	533·5	58	449·0
22 11	0	19·21	2	529·4	3	452·8
	5	10·06	7	530·3	8	431·4
	10	04·71	12	550·0	13	439·5
			14	548·7		
	15	02·15	17	539·8	18	427·7
			19	533·1		
	20	00·67	22	537·1	23	416·4
	25	01·93	27	534·2	28	393·1
	30	07·20	32	520·9	33	389·0
	35	03·28	37	539·9	38	382·5
	40	11·64	42	527·3	43	376·0
	45	20·62	47	491·0	48	380·7
			49	475·7		
	50	25 14·73	51	471·2		
			52	473·9	53	422·9
			54	485·6		
	55	24 52·40				

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′	Bifilar Corrected. Min.	Bifilar Corrected. Sc. Div.	Balance Corrected. Min.	Balance Corrected. Mic. Div.
22 11	56	24 50·22	57	504·5	58	431·3
			59	512·7		
22 12	0	45·78				
	1	45·20	2	526·0	3	419·5
	5	46·55	7	538·6	8	408·4
			9	534·6		
	10	54·15	12	528·6	13	404·0
	15	24 59·97	17	517·3	18	406·1
	20	25 02·69	22	504·4	23	400·9
			24	499·9		
	25	25 02·69	26	497·0		
			27	494·4	28	401·4
			29	491·1		
	30	25 00·44	32	493·4	33	397·7
	35	24 58·89	37	491·1	38	397·3
	40	24 58·72	42	494·3	43	397·4
	45	24 59·03	47	495·9	48	408·7
22 13	0	24 56·40	2	496·8	3	423·9
	10	25 00·98	12	509·4	13	442·1
	20	11·24	22	518·1	23	446·4
	30	15·51	32	512·8	33	453·3
	45	10·88	46	514·6	47	421·8
22 14	0	03·63	2	518·1	3	413·0
	15	03·63	17	519·0	18	419·5
	30	04·28	32	512·7	33	427·5
22 15	0	11·37	2	506·2	3	468·0
	31	15·34	32	530·8	33	505·1
22 16	0	17·15	2	523·8	3	538·6
22 18	0	26·50	2	499·1	3	553·3
	5	27·96	7	499·7	8	551·1
	10	26·61	12	509·7	13	550·4
	15	27·17	17	510·7	18	545·7
	20	27·31	22	523·5	23	543·1
	25	27·34	27	521·9	28	539·7
	30	25·17	32	533·5	33	539·3
	35	25·06	37	532·9	38	539·1
	45	22·03	47	533·4	48	542·8
22 19	0	19·55	2	533·7	3	558·7
	10	19·05	12	533·0	13	564·1
	15	16·15	17	537·0	18	566·5
	20	17·22	22	538·3	23	570·8
	25	18·25	27	538·7	28	573·6
	30	18·57	32	538·1	33	576·3
	40	18·72	42	535·7	43	581·9
22 20	0	19·55	2	537·5	3	587·2
22 21	0	18·50	2	524·9	3	604·9
	20	20·45	22	512·0	23	615·0
22 22	0	16·18	2	517·7	3	628·0
	15	16·75	17	521·0	18	625·5
22 23	0	15·81	2	526·4	3	628·0
	20	19·10	22	522·0	23	634·8
23 0	0	18·99	2	512·3	3	645·3
23 6	0	25 13·63	2	532·9	3	658·2
23 7	0	24 39·14	2	539·6	3	668·5
	1	38·00				
	4	35·61				
	5	34·54				
	6	34·27	7	552·6	7	665·3
	8	35·48				
	9	36·16				

Gött. Mean Time. d. h.	Declination. Min.	Declination. ° ′
23 7	10	24 37·00
	15	41·30
	20	44·73
	25	50·02
	30	24 57·01
	35	25 01·24
	40	05·20
	45	09·57
	50	09·32
23 8*	0	12·31
	10	12·40
	20	12·98
	25	11·22
	30	08·92
	35	08·79
	40	09·93
	55	12·04
23 9	0	12·11
	15	08·34
23 10	0	10·70
27 11	0	25 05·85
	11	04·78
	31	05·85
	45	08·58
27 12	0	08·58
28 15	0	25 21·10
	10	22·47
28 16	0	12·53
	30	09·82
28 17	0	13·86
2 6	0	25 06·23
	10	06·32
	41	14·50
2 7	0	14·17
4 8	0	25 17·49
	5	12·98
	10	11·17
	25	08·92
4 9	0	14·80
4 10	0	12·78
4 11	0	25 02·55
	5	24 57·64
	10	56·63
	15	58·35
	20	57·59
	25	56·57
	30	56·18
	40	24 58·85
	45	25 02·19

BIFILAR. k=0·000140. BALANCE. k=0·0000085.

Nov. 23d 6h. At 6h 10m the declination magnet had not changed from its position at 6h 0m.
* See notes on the Aurora Borealis, *after* the *Extra Observations of Magnetometers*.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
11	563·8			4 12	0	25 06·34	2	523·9	3	598·9	20 4	25	25 09·46	27	532·5	28	670·6
12	565·5	13	661·5		30	13·12	32	528·0	33	587·8		35	11·39	37	530·0	38	666·9
14	569·8			4 13	0	10·94	2	534·9	3	576·6		50	12·42	52	534·3	53	663·8
16	568·6			4 15	0	11·00	2	543·9	3	558·5	20 5	0	25 11·68	2	528·1	3	663·6
17	568·5	18	657·8		30	12·31	32	538·3	33	559·3	20 9	0	24 51·09	2	567·4	3	600·8
19	568·3			4 16	0	16·55	2	539·1	3	555·1		5	25 01·27	7	555·0	8	596·0
21	569·1											10	07·34	12	541·5	13	597·5
22	569·6	23	653·0	5 9	0	25 07·89	2	537·2	3	607·3		15	06·86	17	546·2	18	592·8
24	571·6				10	08·92	11	540·4	12	557·0		20	12·11	22	535·6	23	592·5
26	571·6			5 10	0	13·16	2	535·1	3	604·9		25	11·10	27	532·3	28	590·7
27	570·8	28	647·6									30	11·74	32	527·2	33	589·6
29	567·3			14 5	0	25 19·10	2	547·5	3	586·2		40	10·53	42	517·2	43	590·2
32	557·9	33	643·7		19	20·58						50	07·08	52	518·7	53	590·8
37	550·1	38	639·2	14 6	0	15·20	2	518·8	3	632·1	20 10	0	06·73	2	523·2	3	591·4
42	542·9	43	635·2		16	19·01	17	518·3	18	688·0		30	10·36	32	529·9	33	601·5
47	530·0	48	634·6		20	22·38	22	520·3	23	713·2	20 11	0	12·04	2	530·8	3	601·9
52	530·1	53	629·6		25	16·95	27	533·4	28	749·9		15	11·71	17	530·3	18	601·2
2	524·3	3	628·5				29	545·4			20 12	0	09·94	2	537·3	3	593·6
11	521·4	12	630·0		30	14·35			31	768·5	20 13	0	11·21	2	545·5	3	543·4
22	516·2	23	636·0				32	555·1	33	782·3		10	06·54	12	536·7	13	542·5
27	515·3	28	638·1				34	550·1				15	05·92	17	532·5	18	545·9
32	521·8	33	638·9		35	16·45	36	555·4	37	801·3		25	07·07	27	532·0	28	555·5
37	524·7	38	642·2				38	559·7				30	09·00	32	534·5	33	558·6
42	527·6	43	641·5				39	560·0	39	806·8				47	538·7	48	558·2
47	527·0				40	20·03	41	545·1	42	803·5		50	17·84	52	535·4	53	558·0
57	527·2	58	640·9				43	535·8				55	17·49	57	535·9		
2	525·2	3	641·8				44	531·0			20 14	0	17·60	2	534·9	3	552·4
17	520·6	18	645·6		45	21·71	46	529·9	47	801·3		5	16·38	7	531·7	8	549·2
2	526·9	3	639·9				48	529·8	49	806·9		10	14·20	12	531·1	13	544·8
2	544·9	3	601·1		50	20·36	52	530·2	53	813·7		30	09·35	32	528·1	33	541·5
12	531·0	13	602·6		55	16·45	57	524·0	58	818·5		35	09·24	37	528·4	38	541·7
32	519·6	33	612·6	14 7	0	09·69	2	521·1	3	804·8		50	11·95	52	527·9	53	549·0
47	518·7	48	614·9		5	09·08	7	527·4	8	792·4		55	12·11	57	526·9	58	551·0
2	532·2	3	609·2		10	09·67	12	531·8	13	788·1	20 15	0	11·72	2	528·5	3	552·3
					20	10·43	22	533·3	23	791·3		5	11·88	7	529·8	8	553·3
2	533·1	3	605·4		30	04·84	32	531·9	33	767·3		10	12·15	12	530·7	13	554·1
12	536·2	13	601·3		41	07·65	42	525·4	43	756·3	20 16	0	15·47	2	537·2	3	555·2
2	538·1	3	589·1	14 8	0	13·88	2	517·4	3	749·5	20 17	0	15·17	2	535·4	3	558·4
32	533·8	33	599·8		25	12·83	27	527·9	28	750·0		30	16·62	32	534·6	33	559·1
2	532·9	3	599·7	14 9	0	11·37	2	532·5	3	719·4	20 18	0	19·84	2	535·9	3	563·9
												10	22·37	12	541·1	13	562·1
2	540·9	3	618·3	15 14	0	25 18·30	2	535·3	3	603·5		15	23·34	17	543·8		
12	541·2	13	619·9		5	20·22	7	530·6	8	603·7		20	25·87	22	543·0	23	557·8
42	537·7				10	20·58	12	528·6				25	25·09	27	547·0	28	554·2
2	542·9	3	615·9		25	17·12	27	531·9	28	592·9		30	25·16	32	546·7	33	551·7
				15 15	0	16·03	2	532·9	3	593·8		35	23·75	37	546·3	38	550·4
2	528·1	3	651·1									40	21·83	42	547·4	43	548·5
7	529·9	8	653·5	16 5	0	25 04·78	2	511·5	3	650·8		45	21·06	47	548·3	48	547·3
12	534·4	13	651·5		10	06·24	12	519·4	13	654·0	20 19	0	19·32	2	542·4	3	549·5
27	529·4	28	646·6		15	05·58	17	519·1	18	656·1		10	17·33	12	538·9	13	557·4
2	540·0	3	635·6		25	07·05	27	519·5	28	658·7		20	18·63	22	536·2	23	564·4
2	531·2	3	624·0		35	09·42	37	519·4	38	659·1		30	18·60	32	537·5	33	569·3
2	538·7	3	609·3	16 6	0	14·23	2	528·6	3	651·0		40	17·06	42	538·7	43	572·7
7	546·6	8	605·4									50	16·79	52	538·7	53	574·6
12	552·9	13	601·9	20 3	0	25 23·92	2	535·8	3	630·2	20 20	0	15·51	2	538·2	3	578·7
17	546·9	18	601·1		16	25 20·35	17	526·0	18	640·4		30	15·25	32	539·1	33	588·7
22	538·3				25	25 18·50	27	533·0	28	667·2	20 21	0	14·75	2	534·7	3	591·0
27	533·6	28	602·1	20 4	0	24 53·67	2	547·3	3	677·6							
32	533·0				5	25 00·10	7	545·1	8	677·7	21 4	0	01·14	2	521·0	3	672·9
42	528·7	43	603·4		10	05·38	12	539·6	13	677·6		10	03·70	12	525·1	13	675·7
47	523·5				21	07·51	22	532·2	23	672·3		20	10·80	22	530·6	23	675·4

Bifilar. $k=0{\cdot}000140$. Balance. $k=0{\cdot}0000085$.

Gött. Mean Time. d. h.	Declination. Min.	°	′	Bifilar Corrected. Min.	Sc. Div.	Balance Corrected. Min.	Mic. Div.
21 4	30	25	16·41	32	528·1	33	673·1
	40		21·50	42	519·0	43	673·7
	50		21·53	52	535·1	53	671·9
21 5	0		19·37	2	526·0	3	668·4
	10		16·08	12	520·9	13	676·7
	20		13·46	22	532·6	23	674·7
	30		17·07	32	523·3	33	676·0
	40		00·89	42	537·6	43	675·7
	45		04·88	47	551·7	48	669·2
	50		11·88	52	537·0	53	667·0
	55		14·10	57	533·4	58	666·5
21 6	0		14·71	2	528·2	3	656·9
	5		13·56	7	528·4	8	654·5
	10		14·33	12	530·6	13	651·0
	30		12·18	32	532·8	33	645·2
	40		12·93	42	532·0	43	642·9
	55		14·30	57	535·4		
21 7	0		15·27	2	531·2	3	640·3
21 11	0		18·68	2	537·4	3	598·7
	25		13·59	27	530·3	28	594·6
	40		12·33	41	536·0	42	593·1
21 12	0		11·37	2	535·8	3	593·2
26 8	0	25	11·48	2	529·0	3	621·6
	10		11·71	12	535·7	13	621·8
	15		05·45	17	540·8		
	20		02·25	22	541·1	23	621·2
	25	25	00·50	27	538·4	28	622·6
	30	24	59·43	32	541·6		
	35	25	01·27	37	545·5	38	620·2
	40		03·32	42	549·9	43	614·7
	45		06·73	47	548·7	48	612·3
	50		12·60	52	536·3	53	613·7

Gött. Mean Time. d. h.	Declination. Min.	°	′	Bifilar Corrected. Min.	Sc. Div.	Balance Corrected. Min.	Mic. Div.
26 9	0	25	12·48	2	535·7	3	618·3
	10		09·96	12	529·3	13	616·3
	20		13·72	22	529·1	23	617·0
	35		15·07	37	532·6	38	614·4
26 10	0		14·33	2	534·4	3	608·1
26 18	0		14·46	2	545·4	3	568·8
	10		15·45	12	543·2	13	572·5
26 19	0		17·96	2	544·2	3	570·0
27 10	0	25	15·25	2	530·8	3	601·6
	10		12·29	12	535·0	13	599·3
	15		12·01	17	537·2	18	599·8
	20		12·78	22	536·1	23	599·4
27 11	0		13·64	2	531·3	3	600·8
27 12	0		08·65	2	535·6	3	600·2
	22		15·11	23	530·0	24	602·6
	30		15·20	32	527·0	33	603·0
	40		14·06	42	520·4	43	602·8
	45		12·02	47	517·7	48	602·7
	50		09·76	52	517·2	53	602·5
	55		07·47	57	518·4	58	602·0
27 13	0		06·09	2	520·4	3	604·0
	5		05·45	7	522·4	8	604·6
	10		05·65	12	523·3	13	605·7
	21		05·80	22	524·7	23	606·0
	40		05·58	41	526·9	42	603·7
27 14	0		03·60	2	527·4	3	599·7
	10		03·16	12	525·4	13	599·7
	30		03·30	32	527·0	33	602·0
27 15	0		07·01	2	535·0	3	600·6
	30		07·34	32	532·3	33	600·6
27 16	0		10·41	2	535·4	3	599·6
	30		13·52	31	538·2	32	596·2

Gött. Mean Time. d. h.	Declination. Min.	°	′
27 17	0	25	12·89
28 2	0	25	15·65
	10		15·17
28 3	0		15·38
29 10	3	25	14·37
	10	24	53·07
	24	24	47·42
	49	24	50·38
29 13	0	25	15·72
	10		18·03
	20		20·65
	25		16·32
	30		11·54
	35		13·63
	45		09·69
	50	25	03·61
	55	24	58·62
29 14	0		46·92
	5		45·54
	10		38·42
	15	24	49·07
	20	25	02·40
	25	25	02·15
	30	24	53·11
	35	24	56·97
	40	25	00·94
	50		09·22
	55		11·30
29 15	0		12·72
	10		08·38

BIFILAR. $k=0·000140$. BALANCE. $k=0·0000085$.

Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.		Gött. Mean Time.	Declination.		Bifilar Corrected.		Balance Corrected.	
Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.	d. h.	Min.	° ′	Min.	Sc. Div.	Min.	Mic. Div.
2	538·1	3	595·0	29 15	15	25 03·94	17	496·6	18	569·2	30 8	15	25 23·51	17	542·3	18	614·1
					25	05·22	27	491·1	28	559·7		20	11·37	22	523·0	23	616·2
2	532·8	3	603·5		30	02·89	32	494·6	33	566·2		25	00·27	27	549·9	28	609·1
12	535·1	13	605·0		40	01·95	42	510·3	43	579·3		30	05·79	32	538·8	33	608·5
2	536·6	3	608·7		55	15·44	57	500·4	58	604·5		35	08·75	37	536·1		
				29 16	0	15·91	2	492·9	3	608·7		45	05·65	47	532·9	48	609·1
4	543·6	5	853·5		10	10·43	12	500·2	13	609·8	30 9	0	06·26	2	538·1	3	614·4
11	528·6	12	911·0		20	06·73	22	512·2	23	609·7		30	06·03	32	528·4	33	619·1
25	526·9	26	816·7		30	05·85	32	517·7			30 10	0	07·00	2	532·9	3	621·7
50	510·2	51	759·0		45	08·19	47	515·5	48	613·6							
2	515·1	3	680·3	29 17	0	09·15	2	516·0	3	612·1	31 6	0	25 15·85	2	537·1	3	652·5
12	524·5	13	668·9		20	10·43	22	514·0	23	611·5		20	12·18	22	543·6	23	652·6
18	505·6	19	670·3		40	11·03	42	514·8	43	604·2		40	14·03	42	537·6	43	650·6
22	492·5	23	670·7	29 18	0	10·67	2	517·6	3	599·6	31 7	0	12·75	2	544·1	3	647·0
27	503·3	28	674·5	29 19	0	11·48	2	523·5	3	618·7		20	08·28	22	533·8	23	649·3
32	516·6	33	678·2		10	13·36	12	521·0	13	625·9		30	07·04	32	539·5	33	648·9
37	520·4	38	679·2		20	11·44	22	526·9	23	628·0		45	10·97	46	538·6	47	648·9
47	507·2	48	716·2		30	11·77	32	528·9	33	630·7	31 8	0	12·98	2	538·7	3	645·1
52	505·6	53	724·8	29 20	0	11·34	2	531·5	3	633·0		31	12·95	32	535·8	33	643·4
57	511·8	58	733·3								31 9	0	12·83	2	537·0	3	633·7
2	539·9	3	733·3	30 7	0	25 17·12	2	522·4	3	710·3	31 10	0	03·38	2	547·6	3	616·4
7	548·1				10	12·80	12	527·9	13	688·2		10	07·47	12	542·5	13	619·2
12	568·5	13	709·7		15	15·15	17	526·7	18	683·5		20	08·05	22	541·6	23	615·2
17	566·2	18	692·2		20	15·78	22	531·4	23	680·4		35	10·03	37	538·4	38	610·9
22	530·0	23	697·5		30	16·82	32	521·8	33	682·5		40	06·23	42	548·1	43	604·3
27	505·3	28	700·2		35	06·63	37	536·9	38	684·1		45	06·19	47	555·9	48	601·3
32	524·9	33	686·2		40	00·69	42	552·9	43	672·9		50	10·16	52	549·1	53	602·0
37	536·8	38	679·4		45	07·34	47	538·6	48	665·7	31 11	0	10·98	2	533·0	3	604·6
42	516·5	43	665·6		50	07·31	52	542·0	53	652·0		40	11·14	42	531·4	43	609·1
52	515·5	53	635·7		55	08·66	57	531·7	58	640·2	31 12	0	09·30	2	532·1	3	609·9
57	507·2	58	620·8	30 8	0	06·84	2	557·8	3	620·5		30	10·16	32	528·8	33	612·9
2	496·4	3	603·6		5	11·34	7	565·7	8	607·4	31 13	0	11·51	2	528·6	3	616·3
12	489·1	13	582·7		10	19·68	12	550·0	13	607·4							

BIFILAR. $k=0{\cdot}000140$. BALANCE. $k=0{\cdot}0000085$.

Dec. 30ᵈ 10ʰ. The magnets have evidently been disturbed throughout the remainder of the night.

NOTES ON THE AURORÆ BOREALES.

	d.	h.	m.	
Feb.	11	13	5.	Faint auroral light? 14^h 5^m. Faint auroral light?
Feb.	22	8	30.	Very faint auroral (?) light to NNW.
March	2	9	25.	Sky milky to W. Aurora? Bright moonlight.
March	7	8	25.	Band of auroral light to N. 8^h 30^m. Brightest to N by W.; streamers from NNE. 9^h 0^m. Auroral arch about 5° altitude. Faint streamers from N by W. 9^h 35^m. Streamers.
March	9	12	45.	Rather bright auroral light to N.
March	12	11	0.	Faint auroral light. 35^m. Auroral light gone. 12^h 0^m. Clear to N., and no aurora visible.
March	29	11	26.	Evidently a bright aurora, with streamers, but scarcely visible on account of the bright moonlight.
		12	0.	Fine auroral arch. Azimuths of extremities 35° and 286°, counting from N. to E., S., and W.; altitude of lower distinct edge 11°; breadth of the luminous arch at the magnetic meridian 5°.
			6.	Pencils of aurora *within* the arch at the azimuth 327°. Lunar corona. Yellow portion 2°·7 diameter.
			10.	The auroral arch has fallen in at azimuth 340°; it has a cycloidal termination at azimuth 301°, and slopes off gradually to E.
			13.	Faint streamers due N. Much of the inner edge of the arch is now nearly a straight line.
			18.	Faint streamers continue at the N. Arch brightest at azimuth of 317°.
			26.	Auroral arch fainter; cycloidal termination at azimuth 322°; the arch slopes gradually from the meridian to near the horizon at the eastern extremity, azimuth 30°.
			28.	Pencils at azimuth 326°. 31^m. Pencils at the W. extremity, azimuth 328°. Aurora much fainter, losing the character of an arch—nearly amorphous and fallen in at 0° azimuth, where there is a bright point; patches of cloud cross from eastwards.
			37.	Bright at 3° azimuth. Flickering. 46^m. Faint diffused light. Aurora a little more to W. now. Streaks of fine cirri to NE. (?)
		13	3.	The auroral arch now extends from azimuth 280° to azimuth 5°; much brighter than at 12^h 46^m. Bright at azimuth 325°.
			20.	Pulsations of auroral arch, with waves of light.
		14	50.	The aurora very faint; moon due W. Corona much more distinct; yellow ring previously measured; blue external ring now very visible; whole diameter *about* 5°.
		16	0.	A few streaks of fine cirrus. The aurora very faint.
April	5	11	58.	Auroral streamers to NNW. No arch. 12^h 11^m. No streamers visible. 24^m. The same. 45^m. Auroral light to N.
		12	51.	Fine auroral arch. 13^h 6^m. Aurora in detached patches of faintish light at different altitudes to NNW. Bright moonlight.
		13	40.	No aurora visible. 14^h 40^m. The same. 16^h 6^m. A band of auroral light to N.
April	17	10	55.	Faint auroral streamers seen. 11^h 0^m. A nearly homogeneous auroral light covers a great part of the sky to N. 12^h 0^m. Auroral light still visible.
May	8	11	5.	Auroral light to NNW.? 12^h 5^m. Auroral light to NNW.
May	21	12	5.	Slight auroral light (?) to N.
May	22	11	10.	Very light to N.
Aug.	1	7		Aurora seen at Whitehaven, mentioned in Jameson's Edinburgh New Philosophical Journal, April 1845.
Aug.	2	14	15.	Auroral light or twilight to N.?
Aug.	9	11		Aurora seen at Whitehaven this evening, see Jameson's Journal for April 1845. 14^h 30^m. Appearance somewhat like an aurora to NW. Many falling stars.
Oct.	2	8	0.	Cirri. Belt of auroral light, altitude 4°. 8^h 50^m. Auroral belt, 5° altitude. 10^h. Belt of auroral light?
Oct.	5	9	15.	Sky clear, but no aurora visible. 10^h 10^m. Very faint auroral light? 11^h 15^m. Faint aurora. Streamers at 11^h 10^m?
Oct.	20	14	6.	Auroral arch extending from azimuth 208° to 108°, altitude 9°; throwing up streamers at 8^m from azimuth 137° and 174°, to an altitude of from 15° to 20°; the centre of the arch is at about 340° azimuth: at 11^m–12^m several bright streamers at the azimuth 310°–315° moving rapidly towards the E. The aurora must have commenced to be visible about 14^h, as it was not noticed at 13^h 58^m. 24^m. Aurora now more diffuse and interspersed with bright patches, altitude about 15°. 41^m. Aurora faint and amorphous.

NOTES ON THE AURORÆ BOREALES.

d. h. m.

Oct. 20 15 6. Aurora now very faint and broken up; slight pulsations and very faint streamers. 41^m. Arch very low; faint streamers at azimuths 306° and 10°, and very faint ones between. 55^m. Faint streamers to N 4° W.

16 5. No streamers. 20^m. Aurora bright, rapid pulsations, and waves upwards. 25^m. Quick pulsations; streamers to NNW. 32^m. Brilliant aurora; rapid pulsations from below upwards; a dense mass of very brilliant streamers about this time from N by E. to about NW by N., some of them reaching to an altitude of 50°; rapid pulsations upwards. The streamers terminate abruptly at N by E. 40^m. At one time the streamers rose like a comb from the crown of an arch, the interior of which was dark, but in general they sprung from below the horizon. 45^m. Vivid pencils springing from the horizon to an altitude of 10°, with a wavy or undulatory motion; rather rose-coloured. 52^m. Vivid pencils to N by E.; blank space due N.

17 4. Aurora fainter, amplitude 35°, the lower portion of the aurora assuming a little of the form of the arch; three or four shooting stars seen. 7^m. Aurora in patches, pulsations with faint streamers. 17^m. Two bright pencils, altitude 35°, close together due north; quick pulsations; aurora getting brighter; very vivid pencils due north. 18^m. Moving east a little, pulsation to NW. 23^m. Two falling stars seen. Frequent pulsations about NNW.; two streamers moved to about NNE.; pencils visible to near the west point of the horizon. 25^m. Bright pencils to NNW., altitude 30°. 30^m. Aurora brighter, pencils rising from a *flat* arch, 3° of clear sky beneath; pencils extending to an altitude of 15° or 20°. 35^m. Arch more diffuse, splitting into two branches to NE., to nearly which point pencils extend; shooting star to NE., among and in the direction of the streamers; all the falling stars seen this evening, move in nearly the direction of the streamers. 40^m. Nearly as before, pencils and aurora fainter. 54^m. Aurora much fainter.

18 1. Faint streamers reaching to Polaris; broad bright streamer to NNW., altitude 10°. 10^m. Streamers still visible; twilight; falling star to north.

Nov. 11 6 45. Faint light seen over a bank of clouds to north.

7 15. The aurora has broken into a double arch, the upper one extending from the summit, 10° altitude, at NNW. to about WNW. 22^m. An amorphous mass of light, 6° altitude, to NW. 24^m. Streamers to N $\frac{1}{2}$ E., faint coruscations. 27^m. Vivid to NW.; a bright patch formed due north, about 12° altitude, the highest point of the arch about NW by N. A bank of cirro-stratus to N. and NNE. obscures the aurora there. 30^m. A complete arch about 11° altitude, the arch now extending to almost west point of horizon. 32^m–38^m. Aurora faint. 41^m. Faint streamers to NW by N. rising from the horizon, the arch gone. 43^m. Streamer to N by E. 47^m. Aurora now nearly obscured by the bank of cirro-stratus; streamers to NW. 49^m. A shooting-star moving with a *zig-zag* motion from γ Ursæ Majoris down to the horizon. 53^m. Streamer to NNE.; auroral light again rising above the clouds. 59^m. Faint streamers due north.

8 0. A shooting-star moved very slowly for 10°, through the stars in the head of the Great Bear towards the NNE. point of the horizon. 15^m. Faint streamers to NNE. 18^m. Auroral bank rather bright to NW. 50^m. Aurora still visible, but faint.

9 30. Aurora still visible. 11^h 40^m. Auroral light still visible.

12 20. Aurora still visible. A shooting-star fell vertically from an altitude of 20° above NNW. point of horizon. 13^h 10^m. Mass of clouds to north, about 10° altitude. Auroral light seen above them. 13^h 25^m. Sky covered with clouds and haze, excepting about 0·5 to south.

Nov. 12 13 35. Auroral light seen between patches of clouds to north?

Nov. 13 10 10. Very faint auroral light?

Nov. 16 10 35. Diffuse auroral arch seen. 38^m. Auroral arch 8° altitude, flickering. 41^m–42^m. Bright and varying auroral patches, especially to NNW.; streamers to north; clouds hide a portion. 48^m. Bright auroral patch to N by E., altitude 10°. 55^m. Arch 5° altitude, not bright.

11 0. Aurora seen between scud and cirro-stratus. 23^m. Overcast.

Nov. 17 12 30. Sky clear, moon setting, no aurora visible.

Nov. 18 9 5. Very faint auroral light to N. and E.

Nov. 23 8 See an account, among the Additional Meteorological Notes, of remarkable varying streaks, resembling auroral bands, which were observed *after* a magnetic disturbance of this date. Similar streaks were also observed Nov. 24^d 8^h.

Nov. 24 12 40. Star shot from zenith to the west. 45^m. Portion of an ill-formed auroral arch, extending from W $\frac{1}{2}$ N. to NNW., where its altitude was 10°, stopping at that point. It was first noticed at this time, grew faint, reappeared with greater brightness and breadth, 5° at the broadest, disappeared about 55^m? and was not seen afterwards. The moon was totally eclipsed at this time and appeared quite red. At 53^m a star shot from 40° altitude due SSW.

NOTES ON THE AURORÆ BOREALES.

	d.	h.	m.	
Nov.	24	14	6.	Star shot from near zenith to NNE. Band of cirrus to east, lying nearly S by W. and N by E.? Faint auroral light to north?
Dec.	4	8	5.	Faint auroral light to NNW.; a shooting-star to north at 7^h 58^m moving northwestwards. 11^h 5^m. Auroral light to NNW. 25^m. Auroral light becoming fainter. 40^m. Auroral light very faint.
Dec.	29	10		(Sunday evening.) Brilliant aurora seen by me first at this time, it had been seen sometime before by Mr Hogg, and shortly before by Mr Welsh. At 10^h Mr W. conceived the centre of the auroral arch to be nearly north.
				The only clouds were to north, almost covering the aurora; they stretched in a series of belts or arches from about WNW. to E. The extremity to east had a sort of cycloidal rise, similar to what I have before observed in auroral arches.
			25.	The moon apparently rising due east; at an altitude of about 15° above it, and at the edge of the cirrous clouds, spring a series of streamers lying *en echelon*, they reach about as far as 45° above the SE. At some times it was imagined that the streamers were seen *below* the cirrous cloud, but as the cloud was thin the streamers were probably only seen *through* it.
			30.	The streamers rising from the east, where the moon has now risen, are inclined at an angle of about 30° to the south of the prime vertical; they are seen as far as the meridian, where the streamer is joined by another rising from the SW. These streamers are at times in patches, pulsating and variable; those rising from east have now a more compact form.
			35.	Faint auroral patches to SW. variable.
			40–45.	The patches to SW., nearly radiate from that point, are varying in size and brightness, with occasional rapid pulsations; ultimately they took positions nearly horizontal, slightly (10°—20°) above the south point of horizon, but still pointing to about SW. In this position they were observed till after 11^h, and were nearly stationary; indeed, had they not been closely watched during the whole period they would undoubtedly *now* have been taken for nebulous patches of cirri lighted by the moon. It is necessary to be particular on this point, as I have frequently seen similar appearances in which I could have no confidence as to whether they were auroral or not. In this case, however, they were seen from their formation varying in brightness and form with, *rarely*, rapid pulsations, until they were nearly stationary to south, without any auroral changes, although *slight* changes in position were observed after a considerable watching.
				About 40^m the streamers to east became one bright pencil, moving slightly to south, its origin now pointing E ½ S., and the highest point bent like a hook to south.
			40–45.	Two very bright falling stars seen to west, one moving from about 40° altitude west to about 20° altitude W by N., direction nearly to WNW; the other moving from about 70° altitude W by N. to 50°? altitude WSW., motion about SW.
			50.	Falling star to south, 45° altitude, moving S. by E. among the streaks of aurora.
				About 45^m pencils were seen rising from WNW. portion of the north arch, which was nearly all covered by cloud as before mentioned; bright specks could, however, be seen occasionally to NNE., and the extremity of the arch at WNW. was always seen.
				It should be mentioned, that it was conceived that the aurora was always brighter to SW. than to the S. or WSW.
		13	10.	Patches of thin cirro-stratus, chiefly to east. Thin haze or cirri above, causing a small lunar corona. Aurora faint, probably from the moonlight. Bright patches near north horizon. Nebulous streaks and patches over the sky, which *may* be auroral, but the moonlight renders it doubtful; about 12^h patches or streaks were seen, having a strong resemblance to those seen previously to south.
			35.	Auroral light very faint to north.
				The aurora was observed by several persons before 8^h Göttingen, and was, according to them, very brilliant. Mr Welsh thought at 6^h Göttingen that there was an appearance of aurora to north, but conceived it might be a *twilight-effect*.
Dec.	31	15	10.	The sky looks more milky to north than on other points. Aurora?

OBSERVATIONS OF MAGNETIC DIP.

MAKERSTOUN OBSERVATORY,

1844.

Göttingen Mean Time, Middle of Observation.	Duration.	Needle. Number.	Needle. Temperature.	Needle. End dipping.	Face of Circle E. Mark on Needle E.	Face of Circle E. Mark on Needle W.	Face of Circle W. Mark on Needle E.	Face of Circle W. Mark on Needle W.	Mean.	Observed Dip.	Observer's Initial.
d. h. m.	m.		°		° ′	° ′	° ′	° ′	° ′	° ′	
Jan. 3 2 50	55	2	42	B	72 9·0	71 26·0	71 44·0	71 3·0	71 35·50	71 27·12*	B
				A	71 5·5	72 2·0	70 41·5	71 26·0	71 18·75		
Jan. 6 4 40	35	2	45	A	71 4·0	72 3·5	70 38·0	71 29·5	71 18·75	71 27·69*	B
				B	72 10·5	71 26·5	71 47·0	71 2·5	71 36·63		
Jan. 8 22 25	...	2	34	B	72 7·5	71 22·5	71 50·5	71 0·0	71 35·12	71 18·62†	W
				A	70 1·0	72 40·0	69 31·5	71 56·0	71 2·12		
Jan. 9 0 20	45	2	...	B	72 10·0	71 15·5	72 3·0	70 53·0	71 35·37	71 22·68	W
				A	70 8·0	72 31·0	69 57·0	72 4·0	71 10·00		
Jan. 12 4 0	...	2	45	A	70 15·0	72 23·5	70 7·0	71 56·0	71 10·37	71 24·24	W
				B	72 3·5	71 20·0	71 57·0	71 12·0	71 38·12		
Jan. 16 1 40	...	2	38	B	72 4·5	71 20·0	72 0·5	71 8·0	71 38·25	71 25·75	W
				A	70 25·5	72 30·5	70 5·0	71 52·0	71 13·25		
Jan. 30 0 30	...	2	46	A	70 45·5†	72 37·5	69 55·0	71 45·0	71 15·75	71 27·18	B
				B	72 1·0	71 25·5	71 49·0	71 19·0	71 38·62		
Feb. 2 4 45	...	2	38	B	72 3·0	71 21·5	71 55·5†	71 6·0	71 36·50	71 24·50	W
				A	70 21·5	72 46·0	69 36·0	72 6·5	71 12·50		
Feb. 5 23 30	...	2	41	A	70 22·5	72 50·0	69 29·0	71 50·5	71 8·00	71 21·50†	W
				B	72 9·0	71 25·0	71 50·5	71 3·5	71 37·00		
Feb. 9 3 50	55	2	46	B	72 0·0	71 23·5	71 51·5	71 8·5	71 35·88	71 24·12	W
				A	70 22·0	72 33·5	69 52·0	72 2·0	71 12·37		
Feb. 13 4 30	55	2	42	A	70 33·0	72 39·0	69 46·0	71 54·5	71 13·12	71 23·12	W
				B	72 2·0	71 11·5	71 57·0	71 2·0	71 33·12		
Feb. 16 4 30	60	2	49	B	72 19·0	71 7·0	71 59·0	70 58·5	71 35·88	71 28·94	B
				A	71 2·5	72 5·0	70 41·5	71 39·0†	71 22·00		
Feb. 20 0 20	55	2	43	A	71 3·0	72 17·0	70 25·0	71 34·5	71 19·88	71 26·63*	W
				B	71 59·0	71 28·5	71 47·0	70 59·0	71 33·38		
Feb. 27 4 45	50	2	47	B	72 2·0	71 23·0	71 52·5	71 3·0	71 35·12	71 26·75*	W
				A	70 52·5	72 19·5	70 19·0	71 42·5	71 18·38		
Mar. 1 4 50	...	2	49	A	70 47·5	72 20·5	70 22·0	72 2·5	71 23·12	71 34·12†	W
				B	72 29·0	71 17·0	72 32·0	70 42·5	71 45·12		
Mar. 5 23 50	90	2	48	B	72 47·0	71 16·5	72 17·5	70 41·0	71 45·50	71 34·19*	B
				A	71 13·5	72 13·5	70 36·5	71 28·0	71 22·88		
Mar. 11 23 20	55	2	45	A	71 8·0	72 13·5	70 28·0	71 29·0	71 19·62	71 29·12*	W
				B	72 37·5	71 7·0	72 22·0	70 28·0	71 38·62		
Mar. 19 0 15	50	2	58	B	72 47·0	71 5·0	72 23·5	70 48·5	71 46·00	71 34·00	W
				A	70 57·0	72 20·5	70 21·5	71 49·0	71 22·00		
Mar. 22 4 25	50	2	51	A	71 0·5	72 19·0	70 19·5	71 43·0	71 20·50	71 30·94*	W
				B	72 38·5	71 12·0	72 20·5	70 34·5	71 41·38		
Mar. 26 1 25	65	2	65	B	73 2·5	71 7·0	72 31·5	70 34·5	71 48·88	71 34·38*	B
				A	71 8·0	72 10·5	70 35·0	71 26·0	71 19·88		
Apr. 2 0 15	55	2	54	A	71 6·0	72 15·5	70 33·5	71 55·0†	71 27·50	71 33·44	W
				B	72 30·0	71 17·5	72 9·5	70 40·5	71 39·38		
Apr. 4 4 35	50	2	46	B	72 33·5	71 24·0	72 9·5	70 42·0	71 42·25	71 31·44	B
				A	71 2·0	72 21·5	70 24·0	71 35·0	71 20·63		
Apr. 8 23 20	55	2	58	A	70 58·0	72 17·0	70 33·0	71 36·0	71 21·00	71 33·87	W
				B	72 45·5	71 15·5	72 25·5	70 40·5	71 46·75		
Apr. 12 4 50	45	2	49	B	72 53·0	71 10·5	72 23·0	70 22·0	71 42·13	71 27·50	W
				A	70 52·0	72 35·5	69 49·0	71 35·0	71 12·87		
Apr. 22 23 50	45	2	59	A	70 49·5	72 34·5	69 43·0	71 33·0	71 10·00	71 26·37*	W
				B	73 6·5	71 8·0	72 22·0	70 14·5	71 42·75		
July 21 22 10	80	2	70	B	73 9·5	71 11·5	72 20·0	70 30·0	71 47·75	71 36·31	W
				A	70 59·5	72 23·5	70 22·0	71 54·5	71 24·87		
July 30 1 20	40	2	58	A	71 5·5	72 27·5	70 5·5	71 37·0	71 18·87	71 25·12	B
				B	71 59·5	71 24·0	71 45·0	70 57·0	71 31·38		
July 30 2 5	40	1	58	B	74 35·0	70 33·5	73 55·0	69 55·0	72 14·62	71 25·18	B
				A	68 37 0	72 57·0	68 26·0	72 23·0	70 35·75		

* Observations considered good. † Observations considered bad or doubtful.

Jan. 3d. Good observation. All the readings verified, as usual, by repeatedly lifting and lowering the needle.
Jan. 9d. In changing the poles the needle lay very unsteadily on the block, so that the axle may have been injured.
Jan. 10d. After the needle is lowered by the Ys it often leaps one or two degrees, producing a large arc of vibration, but without altering the mean position.
Jan. 17d. Discovered a piece of the velvet loose at the bottom of the door of the inclinometer, which had wedged the door too tightly when shut, and thus probably affected the level of the instrument.
Jan. 30d. Several bad readings, especially under A dipping.
Feb. 6d. Observation not satisfactory; in some of the readings the needle does not move freely, owing, probably, to the great deposition of moisture on the instrument.
Feb. 16d. Observation fair, excepting (†), which is considered *within* 5′ of the truth.
April 4d. Levelled the instrument, needle vibrating; fair observation.

Göttingen Mean Time, Middle of Observation.	Duration.	Needle.			Face of Circle E.		Face of Circle W.		Mean.	Observed Dip.	Observer's Initial.
		Number.	Temperature.	End dipping.	Mark on Needle E.	Mark on Needle W.	Mark on Needle E.	Mark on Needle W.			
d. h. m.	m.		°		° ′	° ′	° ′	° ′	° ′	° ′	
Aug. 1 22 35	25	2	71	B	72 11·0	71 23·5	71 40·0	70 57·5	71 33·00		W
Aug. 2 4 40	20	2	71	B	72 8·5	71 25·5	71 53·0	70 51·5	71 34·62		
Aug. 5 22 30	25	2	57	A	71 3·0	72 33·0	70 3·0	71 38·0	71 19·25	71 27·03	W
Aug. 6 4 30	20	2	61	A	71 4·5	72 33·0	70 9·5	71 38·0	71 21·25		
Aug. 8 22 45	20	2	63	B	72 21·5	71 25·5	71 46·0	70 51·5	71 36·12*		W
Aug. 9 4 44	18	2	63	B	72 22·0	71 26·0	71 45·5	70 50·5	71 36·00*		
Aug. 13 0 45	43	2	72	A	70 56·5	72 32·5	70 7·5	71 44·0	71 20·12	71 29·09	B
Aug. 13 4 45	23	2	70	A	70 56·5	72 29·5	70 10·0	72 0·5†	71 24·12		
Aug. 15 23 20	30	2	78	B	72 0·0	71 31·0	71 35·5	71 6·5	71 33·25		B
Aug. 16 4 50	15	2	67	B	71 58·5	71 30·0	71 35·0	71 6·5	71 32·50*		
Aug. 19 22 45	15	2	70	A	71 17·0	72 15·0	70 28·0	71 37·5	71 24·37	71 28·00	W
Aug. 20 4 45	20	2	...	A	71 13·0	72 9·0	70 36·0	71 29·5	71 21·88		
Aug. 22 23 45	20	2	66	B	72 9·5	71 33·0	71 40·0	71 6·0	71 37·12		B
Aug. 23 4 40	15	2	66	B	72 8·0	71 34·5	71 34·0	70 58·5	71 33·75		
Aug. 27 22 40	25	2	77	A	71 21·5	72 9·5	70 42·0	71 32·5	71 26·37	71 30·71	B
Aug. 28 4 45	20	2	80	A	71 17·5	72 7·5	70 52·0	71 25·5	71 25·62†		
Sept. 3 0 0	25	2	79	B	72 0·5	71 30·0	71 33·0	71 1·5	71 31·25		W
Sept. 3 4 45	20	2	77	B	72 1·0	71 28·5	71 34·5	71 2·0	71 31·50		
Sept. 5 22 30	20	2	62	A	71 0·5	72 29·5	70 8·0	71 37·0	71 18·75	71 24·56	W
Sept. 6 4 50	30	2	65	A	70 55·5	72 35·0	69 58·5	71 38·0	71 16·75		
Sept. 5 23 0	20	1	64	A	68 39·0	72 59·0	68 21·0	72 37·5	70 39·12	71 29·40	W
Sept. 6 4 25	18	1	64	A	68 37·5	72 58·5	68 18·5	72 35·5	70 37·50		
Sept. 9 23 55	20	2	64	B	72 10·0	71 31·0	71 43·0	70 57·0	71 35·25	71 29·50	B
Sept. 10 1 15	20	2	64	A	71 14·0	72 16·0	70 30·0	71 35·0	71 23·75		
Sept. 10 0 25	25	1	62	B	75 21·5	70 0·0	74 59·0	69 26·0	72 26·62	71 33·87†	B
Sept. 10 0 50	20	1	62	A	68 42·0	72 59·0	68 21·0	72 42·5	70 41·12		
Sept. 10 6 40	20	2	59	A	71 11·5	72 14·0	70 29·5	71 29·0	71 21·00	71 28·37*	B
Sept. 12 23 40	25	2	64	B	72 20·0	71 19·5	71 49·0	70 54·5	71 35·75		
Sept. 13 22 20	20	2	50	B	72 22·0	71 20·5	71 42·5	70 49·0	71 33·50		W
Sept. 14 4 40	15	2	54	B	72 18·0	71 23·0	71 48·0	70 45·5	71 33·62		
Sept. 17 0 15	15	2	52	A	71 12·5	72 27·5	70 10·5	71 20·5	71 17·75	71 25·65	W
Sept. 17 4 45	18	2	53	A	71 13·5	72 27·5	70 7·5	71 22·5	71 17·75		
Sept. 19 22 50	17	2	62	B	72 27·5	71 26·0	71 47·0	70 53·0	71 38·37		W
Sept. 20 4 45	17	2	61	B	72 23·0	71 24·0	71 46·0	70 49·0	71 35·50		
Sept. 23 23 15	20	2	67	A	71 9·0	72 22·0	70 13·0	71 27·0	71 17·75	71 27·81	W
Sept. 24 4 45	15	2	71	A	71 10·5	72 20·0	70 21·0	71 27·0	71 19·62		
Sept. 26 23 5	25	2	68	B	72 30·0	71 31·0	71 46·5	70 56·0	71 40·87		W
Sept. 27 4 50	20	2	69	B	72 23·5	71 30·0	71 43·5	70 56·5	71 38·37		
Oct. 3 22 50	16	2	52	A	71 17·0	72 20·5	70 14·0	71 21·5	71 18·25	71 28·59	W
Oct. 4 4 50	20	2	54	A	71 10·0	72 20·5	70 14·5	71 22·5	71 16·87		
Oct. 7 23 15	20	2	48	B	72 54·0	71 15·5	72 4·0	70 30·0	71 40·87		W
Oct. 8 4 45	20	2	52	B	72 52·0	71 11·0	72 5·0	70 36·0	71 41·00		
Oct. 10 23 35	25	2	60	A	70 48·5	72 41·0	69 40·5	71 30·5	71 10·12	71 25·78	W
Oct. 11 4 55	20	2	57	A	70 47·5	72 41·0	69 43·0	71 33·0	71 11·12		
Oct. 18 0 10	25	2	58	B	72 24·0	71 22·0	71 56·0	70 52·5	71 38·62		B
Oct. 18 23 35	20	2	42	B	72 35·0	71 21·0	71 48·0	70 43·5	71 36·87		
Oct. 21 22 50	17	2	43	A	71 21·0	72 11·5	70 28·5	71 17·5	71 19·62	71 29·59	W
Oct. 22 4 55	20	2	62	A	71 18·0	72 10·0	70 44·0	71 21·0	71 23·25		
Oct. 24 23 0	32	2	50	B	72 48·5	71 20·0	71 57·5	70 36·5	71 40·62		W
Oct. 25 4 50	18	2	50	B	72 44·0	71 19·0	71 57·5	70 42·0	71 40·62		
Oct. 28 23 0	25	2	44	A	71 6·0	72 35·0	69 58·0	71 25·0	71 16·00	71 29·15	W
Oct. 29 4 50	...	2	47	A	71 2·0	72 35·5	70 9·0	71 31·0	71 19·37		
Oct. 31 22 55	40	2	49	B	73 2·0	71 13·5	72 9·5	70 35·5	71 45·12		
Nov. 1 4 55	22	2	46	B	73 3·5	71 14·0	72 8·5	70 30·5	71 44·12		W
Nov. 7 23 55	55	2	47	A	71 18·0	72 22·0	70 16·0	71 27·0	71 20·75†	71 32·56	
Nov. 8 23 45	24	2	51	A	71 8·5	72 28·0	70 20·5	71 27·0	71 21·00		B
Nov. 9 4 30	25	2	50	A	71 9·5	72 20·0	70 20·5	71 29·0	71 19·75		

* Observations considered good. † Observations considered bad or doubtful.

Sept. 5d—6d. The dip deduced for needle No. 1. has been obtained by applying a correction of 51′·09 to the mean A dipping; the correction being half the difference of the observations for A and for B dipping, made July 30d and Sept. 10d.

Oct. 31d. Before this observation the level of the instrument was adjusted.

Nov. 7d. Unsatisfactory observation; the instrument quite damp, and the needle scarcely ceases to vibrate.

Göttingen Mean Time, Middle of Observation.	Duration.	Needle.			Face of Circle E.		Face of Circle W.		Mean.	Observed Dip.	Observer's Initial.
		Number.	Temperature.	End dipping.	Mark on Needle E.	Mark on Needle W.	Mark on Needle E.	Mark on Needle W.			
d. h. m.	m.		°		° ′	° ′	° ′	° ′	° ′	° ′	
Nov. 11 23 20	78	2	44	B	72 23·0	71 20·5	71 50·0	70 45·0	71 34·62	71 27·93	B
				A	71 19·5	72 14·5	70 29·0	71 22·0	71 21·25		
Nov. 14 22 55	40	2	53	A	71 17·0	72 16·0	70 31·0	71 24·0	71 22·00*		W
Nov. 15 4 45	23	2	50	A	71 15·5	72 12·0	70 31·5	71 23·5	71 20·62	71 35·59	
Nov. 18 23 45	60	2	51	B	73 4·0	71 27·0	72 23·5	70 31·5	71 51·50†		W
Nov. 19 4 10	30	2	52	B	73 10·5	71 10·5	72 23·0	70 29·0	71 48·25		
Nov. 21 22 35	34	2	32	B	73 28·0	71 21·5	72 4·5	70 14·0	71 47·00		
Nov. 21 23 25	54	2	34	A	71 23·0	72 29·0	70 19·0	71 27·5	71 24·62	71 35·50	W
				A	71 15·0	72 30·5	70 21·0	71 27·0	71 23·38		
Nov. 22 0 30	30	2	35	B	74 18·0	71 12·0	72 34·0	69 42·0	71 56·50†		W
Nov. 28 23 25	35	2	47	B	73 59·0	70 45·0	72 43·0	69 41·5	71 47·12		W
Nov. 29 3 55	25	2	44	B	74 1·0	70 52·5	72 35·5	69 45·5	71 48·62	71 33·56	
Dec. 2 22 50	23	2	36	A	71 4·5	72 34·0	70 7·0	71 33·0	71 19·62		W
Dec. 3 4 10	25	2	38	A	71 3·0	72 27·0	70 11·5	71 34·0	71 18·87		
Dec. 5 23 10	25	2	23	B	73 0·0	71 24·0	72 2·5	70 26·5	71 43·25		W
Dec. 6 4 10	...	2	27	B	72 52·0	71 25·0	71 58·5	70 31·5	71 41·75	71 30·09	
Dec. 10 23 20	15	2	32	A	71 0·5	72 43·0	69 52·5	71 36·0	71 18·00†		B
Dec. 11 4 50	40	2	34	A	70 56·0	72 46·0	69 53·5	71 34·0	71 17·37		
Dec. 14 1 5	20	2	36	B	72 6·0	71 32·0	71 31·0	70 58·0	71 31·75		B
Dec. 14 4 55	35	2	36	B	72 3·5	71 34·0	71 33·0	70 59·0	71 32·37	71 26·18	
Dec. 16 22 35	25	2	38	A	71 11·5	72 14·0	70 29·5	71 28·0	71 20·75		W
Dec. 17 4 45	23	2	40	A	71 9·5	72 14·5	70 30·0	71 25·5	71 19·87		
Dec. 19 23 40	35	2	27	B	72 40·5	71 26·0	71 46·5	70 36·0	71 37·25		W
Dec. 20 4 35	25	2	27	B	72 40·0	71 24·5	71 47·0	70 38·0	71 37·37	71 28·53	
Dec. 23 22 25	22	2	33	A	71 10·0	72 17·5	70 20·5	71 32·0	71 20·00		W
Dec. 24 4 30	...	2	32	A	71 11·5	72 20·5	70 19·5	71 26·5	71 19·50		
Dec. 26 22 20	23	2	33	B	72 27·5	71 29·0	71 43·5	70 47·0	71 36·75		W
Dec. 27 4 20	25	2	35	B	72 27·5	71 25·5	71 45·5	70 50·5	71 37·25	71 28·28	
Dec. 31 0 30	25	2	40	A	70 53·0	72 41·0	69 56·5	71 32·0	71 15·62		B
Dec. 31 4 45	25	2	38	A	71 2·0	72 44·0	70 8·0	71 40·0	71 23·50		

* Observations considered good. † Observations considered bad or doubtful.

Nov. 20d. First reading uncertain to 20′; instrument in bad order.

OBSERVATIONS

FOR THE

ABSOLUTE HORIZONTAL INTENSITY.

MAKERSTOUN OBSERVATORY,
1844.

Göttingen Mean Time of Observation.		Deflecting Bar. Distance $= r$.		N. End.	Temperature.	Declinometer. Observed Reading.	Declinometer. Reduced to Unifilar.	Unifilar Reading.	Deflection corrected for Torsion.	Bifilar. Reading Corrected.	Bifilar. Thermometer.	Log. $\frac{1}{2} r^3$ tan. u.
d.	h. m.	Feet.			°	Sc. Div.	Sc. Div.	Sc. Div.	° ′ ″	Sc. Div.	°	
Feb. 17	3 42	5·000	E	E	42·5	3·16	3·53	497·54	2 36 34·6	524·8	42·8	0·4543417
	4 6			W	41·0	3·02	3·36	33·97		522·8	42·8	
	4 13		W	E	41·0	3·00	3·34	498·01		523·3	42·8	
	4 31			W	41·0	3·36	3·75	32·48		522·3	42·9	
	3 55	6·750	E	E	41·0	3·70	4·12	361·23	1 3 59·1	520·1	42·8	0·4562960
	3 59			W	41·0	3·37	3·76	171·27		522·0	42·8	
	4 20		W	E	40·5	2·74	3·05	360·13		523·3	42·9	
	4 25			W	41·0	3·02	3·36	170·25		522·3	42·9	
									(Diff.) Sc. Div.			
	1 48	Magnet away				1·38	1·54	263·20	261·66			
	2 +?					0·33	0·36	261·90	261·54			
	3 8					3·07	3·42	265·46	262·04			
	4 40?					3·93	4·38	266·58	262·20			
Mar. 23	2 8	5·125	E	E	47·7	1·43	1·59	475·21	2 25 35·5	515·7	43·1	0·4551536
	2 43			W	47·4	2·22	2·47	44·75		517·3	43·4	
	3 23		W	E	46·5	3·04	3·38	477·72		523·0	43·8	
	2 49			W	47·7	2·53	2·82	44·36		516·8	43·4	
	2 15	5·500	E	E	47·8	1·55	1·72	434·46	1 57 57·3	515·5	43·1	0·4556571
	2 38			W	47·0	2·05	2·28	85·50		516·9	43·3	
	3 19		W	E	46·7	3·03	3·37	436·81		522·9	43·8	
	2 53			W	48·0	2·74	3·05	85·92		517·2	43·5	
	2 21	6·750	E	E	48·0	1·80	2·01	354·74	1 4 2·6	515·4	43·1	0·4571052
	2 33			W	47·0	2·04	2·27	165·26		516·6	43·3	
	3 14		W	E	46·8	2·93	3·26	356·62		522·0	43·7	
	2 58			W	47·5	2·93	3·26	166·24		518·4	43·6	
	2 25	7·250	E	E	48·0	1·86	2·08	336·50	0 51 39·4	516·2	43·2	0·4568422
	2 29			W	46·8	1·93	2·15	183·43		516·1	43·2	
	3 9		W	E	47·0	2·88	3·21	338·27		521·2	43·7	
	3 2			W	47·0	2·90	3·23	184·84		519·7	43·6	
									(Diff.) Sc. Div.			
	1 51	Magnet away				1·42	1·58	259·29	257·71			
	3 35					3·25	3·62	262·33	258·71			
May 29	7 49	5·125	E	E	46·9	2·25	2·50	457·66	2 23 4·4	541·8	52·6	0·4471880
	7 20			W	48·0	1·91	2·13	34·93		539·7	52·7	
	7 57		W	E	46·7	2·65	2·95	459·79		540·6	52·6	
	8 27			W	46·7	4·47	4·98	35·02		540·4	52·6	
	7 44	5·500	E	E	47·0	2·20	2·45	417·40	1 55 52·5	542·1	52·6	0·4475474
	7 25			W	47·7	2·01	2·24	74·96		540·2	52·6	
	8 1		W	E	46·3	2·71	3·02	419·39		540·8	52·6	
	8 22			W	46·7	4·05	4·51	75·35		540·4	52·6	
	7 41	6·750	E	E	47·1	2·21	2·46	339·13	1 2 52·4	541·7	52·6	0·4487191
	7 29			W	47·5	2·04	2·27	153·13		540·6	52·6	
	8 4		W	E	46·0	2·57	2·87	340·42		541·2	52·6	
	8 17			W	46·7	2·85	3·17	153·36		540·3	52·6	
	7 37	7·250	E	E	47·2	2·32	2·58	321·51	0 50 48·4	541·2	52·6	0·4492531
	7 33			W	47·3	2·15	2·39	171·15		541·5	52·6	
	8 8		W	E	46·3	2·52	2·81	322·36		540·8	52·6	
	8 13			W	46·3	2·50	2·79	170·96		539·7	52·6	
									(Diff.) Sc. Div.			
	7 5	Magnet away				1·75	1·94	245·56	243·62			
	8 36					6·30	7·02	250·86	243·84			
Aug. 5	3 29	5·125	E	E	70·5	8·96	9·99	453·29	2 23 3·2	534·6	60·8	0·4485029
	2 44			W	73·2	8·13	9·06	28·31		541·5	60·3	
	3 44		W	E	78·0	10·60	11·81	455·77		534·5	60·9	
	4 15			W	70·8	12·11	13·50	32·43		547·7	61·7	
	3 25	5·250	E	E	70·0	9·45	10·53	439·31	2 13 9·9	532·8	60·7	0·4485438
	2 49			W	73·9	8·12	9·05	43·05		541·5	60·4	
	3 47		W	E	74·8	11·28	12·57	441·81		531·6	61·0	
	4 10			W	71·7	12·49	13·92	47·56		542·3	61·6	

Göttingen Mean Time of Observation.		Deflecting Bar. Distance = r.		Deflecting Bar. N. End.	Deflecting Bar. Temperature.	Declinometer. Observed Reading.	Declinometer. Reduced to Unifilar.	Unifilar Reading.	Deflection corrected for Torsion.	Bifilar. Reading Corrected.	Bifilar. Thermometer.	Log. $\frac{1}{2} r^3$ tan. u.
d.	h. m.	Feet.			°	Sc. Div.	Sc. Div.	Sc. Div.	° ′ ″	Sc. Div.	°	
Aug. 5	3 20	6·750	E	E	70·8	9·16	10·21	334·69	1 2 53·4	531·6	60·6	0·4498550
	3 5			W	74·7	8·70	9·70	147·80		535·0	60·5	
	3 52		W	E	73·9	11·34	12·64	337·71		533·3	61·1	
	4 5			W	72·0	11·78	13·13	151·29		536·9	61·5	
	3 16	6·875	E	E	72·0	9·13	10·17	329·62	0 59 31·3	531·8	60·7	0·4497280
	3 9			W	74·5	8·66	9·66	152·74		534·7	60·6	
	3 55		W	E	72·3	10·66	11·88	331·94		531·7	61·2	
	4 0			W	71·7	11·79	13·14	156·28		532·3	61·3	
									(Diff.) Sc. Div.			
	2 28	Magnet away				8·13	9·06	239·80	230·74			
	4 22					12·23	13·63	231·61	231·61			
Dec. 26	2 53	5·083̇	E	E	33·2	5·64	6·28	465·38	2 29 6·2	538·8	33·0	0·4547844
	1 59			W	33·9	2·31	2·57	18·69		538·5	33·0	
	3 10		W	E	33·1	6·14	6·84	465·18		538·4	33·0	
	3 49			W	33·0	6·65	7·41	23·75		538·6	33·0	
	2 48	5·250	E	E	33·3	4·97	5·54	444·14	2 15 25·5	539·4	33·0	0·4550289
	2 3			W	33·9	2·27	2·53	39·02		538·2	33·0	
	3 13		W	E	33·1	6·13	6·83	445·24		539·3	33·0	
	3 45			W	33·0	7·02	7·82	44·53		540·6	33·0	
	2 39	5·500	E	E	33·5	4·55	5·07	417·74	1 58 9·8	538·3	33·0	0·4563633
	2 7			W	33·8	2·67	2·98	65·53		538·4	33·0	
	3 16		W	E	33·1	6·39	7·12	419·25		539·3	33·0	
	3 42			W	33·0	6·86	7·65	70·56		541·3	33·0	
	2 33	9·7083̇	E	E	33·6	4·01	4·47	273·96	0 21 31·7	539·2	33·0	0·4571025
	2 14			W	33·8	3·15	3·51	209·06		538·7	33·0	
	3 21		W	E	33·1	6·65	7·41	276·98		539·3	33·0	
	3 37			W	33·0	6·97	7·77	213·50		541·2	33·0	
	2 28	9·833̇	E	E	33·7	3·98	4·44	272·81	0 20 44·2	539·0	33·0	0·4574861
	2 17			W	33·7	3·39	3·78	210·52		538·6	33·0	
	3 24		W	E	33·0	6·62	7·38	275·70		539·8	33·0	
	3 34			W	33·0	7·03	7·83	214·70		540·9	33·0	
	2 25	10·250	E	E	33·7	3·70	4·12	268·77	0 18 17·4	539·7	33·0	0·4569860
	2 20			W	33·0	3·54	3·94	214·41		538·9	33·0	
	3 27		W	E	33·0	6·70	7·47	272·36		539·3	33·0	
	3 31			W	33·0	6·91	7·70	218·22		538·6	33·0	
									(Diff.) Sc. Div.			
	1 43	Magnet away				1·88	2·10	239·64	237·54			
	4 2					7·17	7·99	245·48	237·49			
Dec. 30	1 47	5·083̇	E	E	41·6	5·97	6·66	467·98	2 29 7·2	533·1	36·0	0·4552963
	2 16			W	40·7	4·67	5·21	23·72		536·1	36·0	
	1 38		W	E	41·5	5·38	5·89	466·83		535·2	36·0	
	1 3			W	40·8	0·96	1·07	19·74		530·0	36·0	
	1 51	5·250	E	E	41·7	5·87	6·54	447·61	2 15 27·7	533·0	36·0	0·4555859
	2 13			W	40·9	5·35	5·96	44·79		533·3	36·0	
	1 34		W	E	41·4	5·08	5·66	446·50		534·7	36·0	
	1 8			W	40·8	0·81	0·90	39·95		534·1	36·0	
	1 55	9·7083̇	E	E	41·7	5·95	6·63	278·61	0 21 34·1	536·8	36·0	0·4582324
	2 9			W	41·4	5·39	6·01	213·76		532·2	36·0	
	1 24		W	E	41·3	4·70	5·24	277·45		530·0	36·0	
	1 12			W	41·0	1·50	1·67	210·08		529·6	36·0	
	1 55	9·833̇	E	E	41·8	5·57	6·21	276·92	0 20 46·8	535·1	36·0	0·4587297
	2 4			W	41·6	5·58	6·22	215·14		533·8	36·0	
	1 21		W	E	41·3	3·71	4·13	275·24		530·2	36·0	
	1 15			W	41·2	2·65	2·95	212·51		527·9	36·0	
									(Diff.) Sc. Div.			
	0 33	Magnet away				0·00	0·00	240·72	240·72			
	2 34					3·24	3·61	243·52	239·91			

Date.	N. End of Magnet moving E.					N. End of Magnet moving W.					Bifilar.		
	No. of Vib.	Time of Transit.	No. of Vib.	Time of Transit.	Time of one Vib.	No. of Vib.	Time of Transit.	No. of Vib.	Time of Transit.	Time of one Vib.	Time of Obs.	Reading Cor.	Thermometer.
		h. m. s.		h. m. s.	s.		m. s.		m. s.	s.	h. m.	Sc. Div.	°
Feb. 17	0	5 9 53·7	50	5 22 50·1	15·528	1	10 7·3	51	23 2·8	15·510	5 11	521·8	
	6	11 26·7	56	24 23·3	532	5	11 9·3	55	24 4·7	508	20	525·0	42·9
	10	12 29·0	60	25 25·3	526	11	12 42·6	61	25 37·8	504	25	525·9	
	16	14 2·2	66	26 58·4	524	15	13 44·5	65	26 39·6	502	30	525·9	
	20	15 4·2	70	28 0·7	530	21	15 17·7	71	28 12·4	494			
	26	16 37·5	76	29 33·6	522	25	16 19·7	75	29 14·5	496	Mean	524·6	
	30	17 39·6	80	30 35·7	522	31	17 52·7	81	30 47·3	492			
	36	19 12·9	86	31 8·8	518	35	18 54·8	85	31 49·3	490			
	40	20 15·0	90	33 11·0	520	41	20 27·7	91	33 22·1	488			
	46	21 48·1	96	34 44·0	518	45	21 29·8	95	34 24·0	484			
	Mean observed time of one vibration = 15s·5104. Semi-arc of vibration, commencing 10°, ending 4°. Temperature of magnet, 43°·1.												
Mar. 23	0	4 26 11·4	50	4 39 9·4	15·560	1	26 24·4	51	39 20·3	15·518	4 30	521·6	44·0
	6	27 44·8	56	40 42·9	562	5	27 26·7	55	40 22·3	512	36	519·4	
	10	28 47·0	60	41 45·2	564	11	28 59·8	61	41 55·2	508	40	520·2	
	16	30 20·3	66	43 18·5	564	15	30 1·9	65	42 57·2	506	45	521·4	
	20	31 22·7	70	44 20·8	562	21	31 35·0	71	44 30·1	502	50	521·3	44·1
	26	32 56·0	76	45 54·2	564	25	32 37·1	75	45 32·1	500			
	30	33 58·3	80	46 56·2	558	31	34 10·2	81	47 5·0	496	Mean	520·8	
	36	35 31·7	86	48 29·8	562	35	35 12·3	85	48 6·3 ?	480			
	40	36 33·9	90	49 32·1	564	41	36 45·3	91	49 39·5	484			
	46	38 7·3	96	51 5·5	564	45	37 47·4	95	50 41·2	476			
	Mean observed time of one vibration = 15s·5302. Semi-arc of vibration, commencing 7¼°, ending 2°. Temperature of magnet, 46°·2.												
May 29	0	9 20 59·2	50	9 34 1·3	15·642	1	21 14·0	51	34 15·9	15·638	9 20	535·7	
	6	22 33·3	56	35 35·2	638	5	22 16·7	55	35 18·6	638	25	535·3	
	10	23 35·8	60	36 37·8	640	11	23 50·6	61	36 52·2	632	30	535·2	52·4
	16	25 9·5	66	38 11·6	642	15	24 53·0	65	37 54·8	636	35	535·5	
	20	26 12·2	70	39 14·1	638	21	26 26·8	71	39 28·7	638	40	537·2	
	26	27 46·1	76	40 47·8	634	25	27 29·4	75	40 31·2	636	45	535·2	
	30	28 48·7	80	41 50·3	632	31	29 3·2	81	42 4·9	634			
	36	30 22·4	86	43 24·2	636	35	30 5·8	85	43 7·4	632	Mean	535·7	
	40	31 25·0	90	44 26·8	636	41	31 39·7	91	44 41·3	632			
	46	32 58·9	96	46 0·5	632	45	32 42·2	95	45 43·7	630			
	Mean observed time of one vibration = 15s·6358. Semi-arc of vibration, commencing 6¾°, ending 5°. Temperature of magnet, 52°·6.												
Aug. 5	0	6 17 32·2	50	6 30 33·0	15·616	1	17 45·9	51	30 45·8	15·598	6 20	541·9	
	6	19 6·2	56	32 6·7	610	5	18 48·3	55	31 48·4	602	25	540·5	
	10	20 8·7	60	33 9·3	612	11	20 22·0	61	33 21·9	598	31	540·1	63·3
	16	21 42·4	66	34 42·8	608	15	21 24·5	65	34 24·3	596	38	540·8	
	20	22 44·8	70	35 45·2	608	21	22 58·0	71	35 57·8	596	39	540·3	
	26	24 18·4	76	37 19·0	612	25	24 0·4	75	37 0·3	598			
	30	25 20·9	80	38 21·4	610	31	25 33·9	81	38 33·8	598	Mean	540·7	
	36	26 54·6	86	39 54·9	606	35	26 36·4	85	39 36·3	598			
	40	27 57·0	90	40 57·4	608	41	28 10·0	91	41 9·7	594			
	46	29 30·6	96	42 31·0	608	45	29 12·4	95	42 12·2	596			
	Mean observed time of one vibration = 15s·6036. Semi-arc of vibration, commencing 7¼°, ending 5°. Temperature of magnet, 64°·7.												
Dec. 26	0	4 23 18·1	50	4 36 13·3	15·504	1	23 34·6	51	36 30·8	15·524	4 25	540·0	33·05
	6	24 51·1	56	37 46·3	501	5	24 36·8	55	37 32·9	522	30	539·8	
	10	25 53·2	60	38 48·3	502	11	26 9·8	61	39 6·0	524	33	540·3	
	16	27 26·2	66	40 21·2	500	15	27 12·0	65	40 8·2	524	42	539·0	
	20	28 28·3	70	41 23·1	496	21	28 45·2	71	41 41·2	520	45	538·3	
	26	30 1·4	76	42 56·1	494	25	29 47·2	75	42 43·3	522			
	30	31 3·3	80	43 58·0	494	31	31 20·3	81	44 16·3	522	Mean	539·5	
	36	32 36·5	86	45 30·9	488	35	32 22·5	85	45 18·3	516			
	40	33 38·6?	90	46 32·8	484	41	33 55·6	91	46 51·4	516			
	46		96			45	34 58·	95					
	Mean observed time of one vibration = 15s·5086. Semi-arc of vibration, commencing 3°·6, ending 1°·1. Temperature of magnet, 33°·8.												

Date.	N. End of Magnet moving E.					N. End of Magnet moving W.					Bifilar.		
	No. of Vib.	Time of Transit.	No. of Vib.	Time of Transit.	Time of one Vib.	No. of Vib.	Time of Transit.	No. of Vib.	Time of Transit.	Time of one Vib.	Time of Obs.	Reading Cor.	Thermometer.
		h. m. s.		h. m. s.	s.		m. s.		m. s.	s.	h. m.	Sc. Div.	°
Dec. 30	0	2 50 31·2	50	3 3 27·3	15·522	1	50 47·6	51	3 44·2	15·532	2 52	531·8	36·1
	6	52 4·5	56	5 0·5	520	5	51 49·7	55	4 46·1	528	2 57	533·3	
	10	53 6·7	60	6 2·5	516	11	53 23·0	61	6 19·2	524	3 2	535·1	
	16	54 39·7	66	7 35·3	512	15	54 25·0	65	7 21·2	524	7	539·0	
	20	55 41·9	70	8 37·4	510	21	55 58·2	71	8 54·3	522	12	534·8	
	26	57 14·9	76	10 10·5	510	25	57 0·5	75	9 56·5	520	17	535·2	36·2
	30	58 17·2	80	11 12·2	500	31	58 33·7	81	11 29·5	516			
	36	59 50·2	86	12 45·3	502	35	59 35·6	85	12 31·5	518	Mean	534·9	
	40	3 0 52·2	90	13 47·3	502	41	1 8·8	91	14 4·7	518			
	46	2 25·3	96	15 20·2	498	45	2 11·0	95	15 6·8	516			

Mean observed time of one vibration = 15s·5155. Semi-arc of vibration, commencing 3°·6, ending 0°·9. Temperature of magnet 37°·7.

HOURLY METEOROLOGICAL OBSERVATIONS.

MAKERSTOUN OBSERVATORY.

1844.

Gott. Mean Time.		BARO-METER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1^h.	10^m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0–10.	
0	13	......	...	...	...	...	...			......	
	14	29·283	32·5	31·3	1·2	0·1	0·0		— : — : 22	9·5	Sheets of cirri or cirrous-haze; lunar halo.
	15	......	...	...	...	...	...			......	
	16	250	30·0	29·4	0·6	0·0	0·0		— : — : 22	1·5	Cirri in zenith; cirrous-haze to E.
	17	232	28·3	27·4	0·9	0·0	0·0			......	
	18	215	30·0	29·3	0·7	0·0	0·0			0·7	Cirro-strati to E.
	19	189	32·1	30·9	1·2	0·0	0·0			5·0	Snow.
	20	194	30·0	...	...	0·6	0·0	20	26 : — : —	1·5	Scud.
	21	199	30·9	29·9	1·0	0·0	0·0			......	
	22	220	30·6	29·7	0·9	0·0	0·0			0·2	Cumulo-strati and cirro-strati on horizon.
	23	235	32·3	30·9	1·4	0·0	0·0			......	[pat. scud to N.
1	0	241	32·3	30·8	1·5	0·0	0·0		24 : — : —	0·1	Pat. wo. cir., cum.-str. cir.-h. E. hor.; sc. on Cheviot,
	1	234	33·3	31·2	2·1	0·0	0·0			......	[and E. hor.
	2	229	33·6	31·4	2·2	0·1	0·0			0·5	Wo. cir.; sc. to W.; cum.-str. and cir.-haze on NE.
	3	221	33·9	31·8	2·1	0·3	0·0	21	— : — : 25	2·0	Woolly cir.; cum.-str. and cir.-haze on NE. horizon; cir.-str. to W.
	4	220	32·0	30·6	1·4	0·0	0·0		— : 25 : 21	3·0	Var. kinds of cir.; wo. cir.-cum.; thick dif. cir. to E.
	5	222	32·3	31·0	1·3	0·0	0·0		26 : — : —	9·5	Thick scud; cirro-strati.
	6	214	31·3	...	...	0·0	0·0			10·0	Snowing; Moon's disc obscurely visible.
	7	211	29·0	28·6	0·4	0·0	0·0			......	
	8	207	28·0	27·3	0·7	0·0	0·0			1·5	Cirro-strati and cirrous-haze on horizon.
	9	195	28·3	27·2	1·1	0·0	0·0			......	
	10	189	26·3	26·0	0·3	0·1	0·0			2·0	Cirri in zenith; lunar halo.
	11	210	25·0	24·7	0·3	0·0	0·0			2·0	Diffuse cirri and cirrous-haze.
	12	205	28·6	27·5	1·1	0·0	0·0			1·5	Cirri.
	13	29·207	27·5	27·0	0·5	0·0	0·0			1·0	Cirro-strati and cirrous-haze to E.
	14	217	26·0	25·3	0·7	0·0	0·0			2·0	Diffuse cirri and cirrous-haze to NE.
	15	228	27·9	27·1	0·8	0·0	0·0			9·0	Diffuse cirri.
	16	244	29·7	28·7	1·0	0·1	0·2		— : — : 24	9·0	Woolly cirri.
	17	258	30·3	29·6	0·7	0·2	0·1	23	— : — : 24	9·0	Id.
	18	279	30·0	29·4	0·6	0·1	0·2	23		3·0	Cirrous clouds.
	19	311	29·9	29·3	0·6	0·0	0·0			3·0	Id.
	20	343	29·7	29·0	0·7	0·3	0·2	28		4·0	Diffuse cirri.
	21	326	28·2	27·5	0·7	0·3	0·2			......	
	22	404	28·0	27·5	0·5	0·3	0·2		2 : — : —	5·5	Scud; cumuli on SE. hor.; cir.-haze on N. horizon.
	23	431	28·9	28·5	0·4	0·3	0·2			......	
2	0	451	29·3	29·1	0·2	0·5	0·1			1·5	Scud; woolly cirri.
	1	470	31·9	31·5	0·4	...	...			8·0	
	2	495	30·4	30·3	0·1	0·5	0·1			2·0	Loose cumuli to E.
	3	535	29·3	26·7	2·6	0·1	0·1			0·7	
	4	559	27·8	25·3	2·5	0·0	0·0			0·2	Cumuli to E.
	5	561	24·5	23·0	1·5	0·0	0·0			......	
	6	569	22·8	21·9	0·9	0·0	0·0			0·1	A streak of cirro-stratus to E.
	7	584	20·6	20·0	0·6	0·0	0·0			0·1	Cirro-stratus to W.
	8	591	20·0	18·6	1·4	0·0	0·0			0·5	Linear cirri lying from N by E. to S by W.
	9	597	15·4	14·8	0·6	0·0	0·0			......	
	10	599	22·6	20·8	1·6	0·0	0·0		— : — : 28	3·0	Diffuse cirri.
	11	584	23·3	22·0	1·3	0·4	0·0			6·0	Mottled and linear cirri lying from SE to SW.
	12	552	24·4	23·2	1·4	0·0	0·0		4 : — : —	8·0	Scud; cirri to SW.; Moon nearly obscured.
	13	29·537	28·2	26·3	1·9	0·2	0·3	22		10·0	Scud.
	14	530	27·8	26·0	1·8	0·4	0·0		— : — : 28	7·0	Linear and woolly cirri; scud and cumuli to E.
	15	530	27·7	26·3	1·4	0·0	0·0			8·0	Scud.
	16	495	30·5	28·3	2·2	1·9	1·7	20		9·0	Id.
	17	485	32·2	30·0	2·2	1·8	1·3	19		9·0	Id.
	18	448	32·7	30·9	1·8	1·3	1·0	18		10·0	Id.
	19	443	35·3	32·3	3·0	1·0	0·9			10·0	Id.
	20	436	35·9	33·3	2·6	1·4	1·6	19		9·5	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Jan. 1^d 20^h. The wind has been blowing about 0·2 or 0·3 lb. for some time, but no pressure has been indicated by the anemometer, probably from the vane being frozen up.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1^h.	10^m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
2	21	29·448	35·4	33·7	1·7	0·7	0·3	19	24 : — : —	10·0	Scud ; mottled cirri and cirro-strati.
	22	440	35·3	33·5	1·8	2·7	1·5	19	22 : 24 : —	8·5	Two currents of scud ; cirro-strati and cirri to E.
	23	418	38·0	35·2	2·8	2·2	1·7	20	23 : — : —	8·5	Scud ; cirro-cumuli.
3	0	425	38·5	35·9	2·6	3·0	1·4		23 : 28 : —	8·0	Id. ; id.
	1	430	39·7	37·3	2·4	1·5	0·6	20	23 : — : —	8·5	Id. ; masses of mottled cirri.
	2	427	39·1	36·8	2·3	0·8	0·3	20	23 : — : —	9·0	Id. ; mottled and linear cirri ; slight shower.
	3	427	37·4	36·0	1·4	0·6	0·5	20	24 : — : —	10·0	Id. ; cirro-strati to NE.
	4	424	37·0	35·9	1·1	1·2	0·0		24 : — : —	10·0	Thick scud ; cirrous-clouds ; light rain occasionally.
	5	430	36·1	35·1	1·0	0·0	0·0		24 : — : —	10·0	Id. ; id.
	6	411	37·4	35·9	1·5	0·0	0·0			10·0	Id.
	7	405	35·2	34·2	1·0	0·0	0·0			10·0	Id.
	8	396	35·0	34·1	0·9	0·0	0·0			10·0	Id.
	9	377	35·0	34·2	0·8	0·0	0·0			10·0	Id.
	10	362	34·5	34·0	0·5	0·0	0·0			10·0	Id. ; rain.
	11	341	33·2	33·1	0·1	0·0	0·0			10·0	A slight fall of snow.
	12	311	32·9	32·8	0·1	0·0	0·0			10·0	Id. ; Moon barely visible.
	13	29·302	32·8	32·8	. . .	0·0	0·0			10·0	A slight fall of snow.
	14	282	32 9	32·9	. . .	0·0	0·0			10·0	Id.
	15	275	33·1	33·0	0·1	0·0	0·0		6 : — : —	10·0	Id.
	16	276	33·1	33·0	0·1	0·0	0·0			10·0	Id.
	17	274	33·7	33·5	0·2	0·0	0·0			10·0	Id.
	18	282	34·0	33·9	0·1	0·0	0·0			10·0	Slight drizzle.
	19	305	34·7	34·5	0·2	0·0	0·0			10·0	Id.
	20	339	35·1	34·9	0·2	0·0	0·0			10·0	Id.
	21	359	35·2	35·0	0·2	0·0	0·0		4 : — : —	10·0	Thick homogeneous scud ; drops of rain.
	22	398	35·0	34·9	0·1	0·0	0·0			10·0	Thick mass of cirrous clouds.
	23	421	35·3	35·0	0·3	0·0	0·0			10·0	The same, a few drops of rain.
4	0	430	36·4	36·0	0·4	0·0	0·0			10·0	Scud and cirrous clouds ; homogeneous.
	1	441	36·8	36·2	0·6	0·0	0·0			10·0	Id. ; id.
	2	454	36·9	36·6	0·3	0·0	0·0		— : — : 18	9·7	Watery-looking woolly cirri in zen. ; thick on hor. *
	3	482	36·6	36·3	0·3	0·0	0·0			10·0	Loose scud to SE. ; thick cirrous mass.
	4	481	36·0	35·9	0·1	0·0	0·0		20 : — : —	10·0	Scud ; thick cirro-stratus.
	5	485	35·0	34·8	0·2	0·0	0·0			10·0	Thick mass of clouds ; nearly homogeneous.
	6	484	34·8	34·7	0·1	0·0	0·0			10·0	Id. ; id.
	7	477	34·6	34·4	0·2	0·0	0·0			10·0	Id. ; id.
	8	462	35·1	34·8	0·3	0·0	0·0		14 : — : —	10·0	Scud ; dense clouds above.
	9	450	36·9	36·3	0·6	0·0	0·0		14 : — : —	10·0	Id. ; id.
	10	424	37·8	37·3	0·5	0·0	0·0	15	14 : — : —	10·0	Id. ; id.
	11	397	38·3	37·6	0·7	0·2	0·0	19		10·0	A few drops of rain.
	12	363	39·0	38·7	0·3	0·2	0·1	14		10·0	Light rain.
	13	29·326	39·0	38·7	0·3	0·1	0·0			10·0	Rain.
	14	296	39·8	39·6	0·2	0·0	0·0			10·0	Id.
	15	242	40·4	40·0	0·4	0·0	0·0		16 : — : —	10·0	Scud.
	16	201	41·1	40·8	0·3	0·1	0·1	19		10·0	Light drizzle.
	17	159	41·3	41·1	0·2	0·2	0·0	18		10·0	Scud.
	18	125	41·7	41·6	0·1	0·0	0·0			10·0	Id.
	19	108	41·7	41·6	0·1	0·0	0·0			10·0	Id.
	20	092	43·3	43·0	0·3	0·0	0·0			10·0	Id.
	21	089	48·0	47·9	0·1	0·0	0·0			10·0	Light drizzle.
	22	088	48·5	48·2	0·3	0·1	0·1			10·0	Fog in the valleys.
	23	066	48·3	48·2	0·1	0·0	0·0			10·0	Scud.
5	0	29·004	49·3	49·0	0·3	0·7	0·1	18		10·0	Heavy rain.
	1	28·983	49·3	49·0	0·3	0·1	0·1	18	20 : — : —	10·0	Scud ; cirrous-clouds ; sky seen occasionally.
	2	960	50·0	49·9	0·1	1·5	0·6	19	20 : — : —	10·0	Id.
	3	996	50·7	49·9	0·8	0·8	1·8	20	20 : — : —	10·0	Id.
	4	979	49·6	49·0	0·6	1·8	0·2	19	20 : — : —	10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Jan. 4^d 3^h. Observation made at 3^h 15^m.

Jan. 5^d 0^h. Observation made at 0^h 7^m.

* See additional meteorological notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
5	5	28·957	49·5	48·4	1·1	0·5	0·2		20 : — : —	9·0	Scud.
	6	931	50·0	48·7	1·3	0·7	0·5		20 : — : —	10·0	Id.
	7	915	49·6	48·1	1·5	0·4	0·2	18	20 : — : —	10·0	Id.
	8	892	48·5	47·9	0·6	0·2	0·1	18	20 : — : —	9·5	Id.; cirri and haze; broad lunar corona.
	9	885	47·8	46·8	1·0	0·9	0·9	18		10·0	Heavy shower.
	10	877	46·7	45·9	0·8	0·3	0·1	18	20 : — : —	9·0	Scud; faint traces of aurora to NNW.
	11	876	45·4	44·9	0·5	0·0	0·0			6·0	Loose scud.
	12	865	43·6	43·1	0·5	0·0	0·0		21 : — : —	7·5	Id.
	13	28·846	45·0	44·3	0·7	0·0	0·0		21 : — : —	7·0	Loose scud.
	14	820	46·2	45·7	0·5	0·0	0·0			10·0	Rain.
	15	803	44·9	44·1	0·8	0·0	0·0			10·0	Id.
	16	803	44·0	43·9	0·1	0·0	0·0			10·0	Id.
	17	782	44·2	43·8	0·4	0·0	0·0			10·0	Scud.
	18	772	43·9	43·6	0·3	0·0	0·0			10·0	Heavy rain.
	19	754	43·6	43·0	0·6	0·0	0·0			10·0	
	20	754	42·7	42·3	0·4	0·0	0·0			9·5	Scud; heavy clouds to W.
	21	768	42·0	41·7	0·3	0·0	0·0		23 : 22 : 16	8·5	Id.; woolly cirro-cumuli, slowly; woolly cirri, slowly.
	22	783	42·0	41·5	0·5	0·0	0·0		23 : 22 : 17	5·5	Id.; id.; id.
	23	804	40·9	40·8	0·1	0·1	0·0		24 : — : —	9·5	Id.; cirro-cumuli, cirro-strati, woolly cirri.
6	0	807	44·0	43·4	0·6	0·0	0·0		24 : — : —	9·5	Cirro-cumulous-scud; cirri and cirrous-haze to E.
	1	806	45·0	44·1	0·9	0·0	0·0		23 : — : —	7·0	Id.; id.
	2	815	45·5	44·7	0·8	0·0	0·0		21 : 24 : —	3·0	Loose scud; cirro-cumulous-scud; cirro-strati to E.
	3	839	46·8	45·3	1·5	0·0	0·0		— : 24 : —	8·0	Cirro-cumulous-scud moving slowly.
	4	857	44·9	43·6	1·3	0·0	0·0		24 : — : —	9·8	Scud.
	5	873	43·7	42·8	0·9	0·0	0·0		26 : 24 : —	10·0	Two currents of scud.
	6	895	43·5	43·2	0·3	0·0	0·0			4·0	Cirro-cumuli to SW.
	7	918	40·3	39·9	0·4	0·0	0·0			3·0	Id.
	8	943	40·7	40·2	0·5	0·0	0·0		26 : — : —	10·0	Loose scud; cirro-cumuli on E. horizon.
	9	961	40·0	39·5	0·5	0·0	0·0		26 : — : —	9·5	Id.
	10	28·987	41·2	40·5	0·7	0·0	0·0		26 : — : —	9·0	Id.
	11	29·003	40·0	39·6	0·4	0·0	0·0		— : — : 26	7·0	Woolly cirri; lunar corona.
	12	29·022	41·9	40·9	1·0	0·0	0·0			10·0	Thick woolly cirri.
7	0					0·0	0·0				
	13	29·491	34·6	33·6	1·0	0·0	0·0		28 : 6 : 6	8·0	Pat. loose scud; thick cir.-cum., cirri; col. lun. corona.
	14	522	35·6	34·7	0·9	0·0	0·0			10·0	Thick cirrous mass.
	15	544	36·2	35·3	0·9	0·0	0·0			10·0	Id.
	16	561	36·6	35·7	0·9	0·0	0·0		0 : — : —	10·0	Loose scud, the Moon's disc visible through it.
	17	578	36·1	35·7	0·4	0·0	0·0			10·0	Drops of rain.
	18	598	33·2	33·0	0·2	0·0	0·0		— : — : 2	8·0	Varieties of cirri; coloured lunar corona 4° radius.
	19	627	34·8	34·7	0·1	0·0	0·0		2 : — : —	9·9	Thick cirro-stratous-scud; lunar corona.
	20	662	36·0	35·7	0·3	0·0	0·0			9·8	Loose scud; cirrous clouds.
	21	702	36·4	36·1	0·3	0·0	0·0			10·0	Scud.
	22	736	36·7	36·3	0·4	0·0	0·0		— : — : 7	7·0	Id.; cirri.
	23	758	38·0	37·7	0·3	0·0	0·0		8 : — : —	9·0	Thin scud; strati to E.
8	0	773	38·9	38·3	0·6	0·0	0·0			10·0	Scud.
	1	798	39·5	38·5	1·0	0·0	0·0		11 : — : —	10·0	Id.
	2	812	40·0	39·4	0·6	0·0	0·0		9 : — : —	10·0	Thin scud; stratus; light rain.
	3	806	40·6	39·9	0·7	0·0	0·0		9 : — : —	9·8	Id.
	4	880	39·9	39·3	0·6	0·0	0·0		11 : — : —	9·7	Scud; cirrous-scud.
	5	901	38·7	38·1	0·6	0·0	0·0			10·0	Scud in strange conglomerations; cirri.
	6	917	39·0	38·0	1·0	0·0	0·0			9·8	Id.; id.
	7	937	38·2	37·4	0·8	0·0	0·0			10·0	Dark.
	8	955	38·6	37·6	1·0	0·0	0·0			10·0	Id.
	9	29·975	38·8	37·8	1·0	0·0	0·0			10·0	Id.
	10	30·006	38·7	37·4	1·3	0·0	0·0			10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	Baro-meter at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
8 11	30·016	38·2	37·8	0·4	0·0	0·0			10·0	Dark.
12	026	37·9	36·5	1·4	0·0	0·0			10·0	Id.
13	30·043	37·3	36·0	1·3	0·1	0·0		13 : — : —	9·9	Scud ; sky to SE.
14	057	37·0	36·7	0·3	0·9	0·1	14	16 : — : —	10·0	Id.
15	059	36·4	35·2	1·2	0·3	0·2		16 : — : —	8·0	Id. ; woolly clouds above.
16	064	35·8	34·8	1·0	1·1	0·2	16	16 : — : —	6·0	Loose scud ; lunar halo, radius 23°, breadth 1½°.
17	055	35·7	35·3	0·4	1·5	0·9	14	16 : — : —	6·0	Id. ; id.
18	062	35·0	33·5	1·5	1·6	0·1	16		10·0	More clouds, halo still visible.
19	066	34·9	33·4	1·5	0·1	0·1	16		10·0	Upper portion of halo visible, Moon seen faintly.
20	071	35·4	34·0	1·4	1·2	0·9	16		10·0	Scud and cirrous-haze. [W.
21	063	35·0	33·0	2·0	1·7	1·7	15	15 : — : —	7·0	Scud ; cross-linked woolly cirri, the links lying E. and
22	064	34·4	32·4	2·0	1·1	0·1	15	15 : — : —	10·0	Id. ; homogeneous sheet of cirri.
23	052	34·2	32·2	2·0	1·2	1·1	15	15 : — : —	10·0	Id.
9 0	026	34·7	32·4	2·3	2·0	1·0	18	16 : — : —	10·0	Id. ; cirri ; cirro-strati ; wind in gusts.
1	30·009	35·2	33·0	2·2	1·5	0·7	17		10·0	As before ; beginning to snow.
2	29·996	33·0	32·8	0·2	0·9	0·3	17		10·0	Moderate snow shower.
3	968	33·0	32·8	0·2	1·5	1·1	16		10·0	Snowing.
4	958	32·9	32·7	0·2	1·6	1·1	16		10·0	Id.
5	937	32·8	32·6	0·2	1·8	2·3	16		10·0	Id.
6	917	32·8	32·4	0·4	2·0	0·9	14		10·0	Id.
7	900	32·4	32·4	...	1·5	1·1	16		10·0	Id.
8	881	32·7	32·6	0·1	0·6	0·0	17		10·0	Id.
9	856	32·9	32·5	0·4	0·6	0·1	15		10·0	Id.
10	844	33·3	32·5	0·8	0·1	0·1	16		10·0	Id.
11	818	33·2	32·7	0·5	0·1	0·0	16		10·0	Sleet and small hail.
12	812	33·0	32·7	0·3	0·0	0·0			10·0	Light snow.
13	29·814	33·0	32·7	0·3	0·0	0·0			10·0	Light snow.
14	795	34·1	33·8	0·3	0·0	0·0			10·0	Snow nearly ceased ; clouds breaking.
15	816	35·1	35·0	0·1	0·0	0·0		29 : — : —	9·7	Scud ; sky in zenith.
16	828	36·1	35·8	0·3	0·0	0·0			0·5	Cirro-strati to E. ; scud to W. and S.
17	846	36·0	35·9	0·1	0·0	0·0		24 : — : —	2·5	Scud moving quickly.
18	854	38·3	38·2	0·1	0·0	0·0		25 : — : —	8·5	Id.
19	866	37·3	37·1	0·2	0·0	0·0			0·2	Scud to SW.
20	872	36·9	36·4	0·5	0·0	0·0			1·2	Id. to SE.
21	880	36·6	36·4	0·2	0·0	0·0		24 : — : 28	2·0	Id. to E. ; woolly and linear cirri.
22	898	37·7	37·3	0·4	0·0	0·0		24 : 28 : 28	2·0	Id. ; varieties of cirri, cirro-cumuli.
23	901	39·1	38·1	1·0	0·0	0·0		26 : — : —	9·0	Id. ; cirrous clouds.
10 0	905	39·7	39·5	0·2	0·0	0·0			9·8	Id. ; slight shower lately.
1	903	39·0	38·6	0·4	0·0	0·0		26 : — : —	2·0	Id. ; mottled and linear cirri.
2	927	40·4	39·9	0·5	0·0	0·0		— : 28 : 28	1·5	Mot. cir., small cir.-cum. rad. from NW by N. ; scud.
3	947	41·6	40·1	1·5	0·0	0·0		— : 29 : 29	4·0	Wo. and lin. cir., cir.-cum. ; scud on Cheviot ; cir.-str.
4	961	41·3	40·0	1·3	0·0	0·0		— : 28 : 28	8·0	Woolly and crossed cir., cir.-cum. lying NNW. to SSE.
5	971	41·3	39·7	1·6	0·0	0·0		— : 28 : —	8·0	Woolly cir. and cir.-cum. lying NNW. to SSE. ; cir.-str.
6	980	41·0	39·3	1·7	0·0	0·0			9·7	Id.
7	29·999	43·6	40·4	3·2	0·0	0·0			10·0	Id.
8	30·007	41·1	39·7	1·4	0·0	0·0			10·0	Id.
9	022	42·1	40·4	1·7	0·0	0·0			8·0	Bands of cirri lying NNW. to SSE.
10	036	42·5	40·7	1·8	0·0	0·0			2·5	Cirri radiating from SSE. ; auroral light ?
11	035	42·0	40·6	1·4	0·0	0·0			1·0	Id. ; id.
12	041	38·6	38·3	0·3	0·0	0·0			1·0	Id. ; lunar corona.
13	30·042	39·6	39·5	0·1	0·0	0·0			1·0	Cirri radiating from SSE.
14	057	40·9	40·0	0·9	0·0	0·0			4·0	Woolly cirri and cirro-cumuli as before ; lunar corona.
15	066	42·2	40·9	1·3	0·0	0·0			3·0	Cirro-cumuli.
16	074	41·0	40·2	0·8	0·0	0·0			1·0	Id.
17	070	40·8	40·3	0·5	0·0	0·0			1·0	Cirrous clouds to E. ; cirro-strati to S.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Jan. 8d 18h. Observation made at 18h 25m.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
10	18	30·088	38·1	38·0	0·1	0·0	0·0		26 : — : —	3·5	Scud, producing a coloured lunar corona; cirri.
	19	094	38·1	37·9	0·2	0·0	0·0		27 : — : —	1·0	Loose scud.
	20	100	40·0	39·8	0·2	0·0	0·0			0·2	Cirro-strati to E.
	21	118	40·2	39·9	0·3	0·0	0·0			0·5	Id.; patches of scud.
	22	123	40·1	39·5	0·6	0·0	0·0			0·5	Id.; scud on Cheviot.
	23	127	39·6	39·3	0·3	0·0	0·0			0·2	Id.
11	0	120	40·8	40·3	0·5	0·0	0·0			0·2	Id.
	1	114	44·3	42·4	1·9	0·0	0·0			3·0	Cirro-strati to E.; mottled and linear cirri to W.
	2	108	45·4	43·3	2·1	0·0	0·0		— : — : 28	6·0	Scud; cirri and cirro-cumuli.
	3	102	43·7	42·2	1·5	0·0	0·0		— : — : 4	6·0	Patches of scud; cirri, cirro-cumuli, cirro-strati.
	4	102	43·5	41·9	1·6	0·0	0·0			6·0	Id.; id., id.
	5	096	39·9	39·1	0·8	0·0	0·0	18	— : 28 : —	4·0	Cir.-cum.-str.; cir. to NW., cir.-h. to E.; sc. on Cheviot.
	6	093	38·6	38·2	0·4	0·0	0·0		20 : — : 26	8·0	Loose scud moving quickly; cirrous clouds.
	7	088	37·5	37·1	0·4	0·0	0·0			8·5	Cirro-stratus.
	8	078	39·7	39·3	0·4	0·0	0·0			10·0	Id.
	9	060	42·1	41·4	0·7	0·0	0·0			10·0	A few drops of rain.
	10	017	42·9	41·9	1·0	0·1	0·0	21		10·0	
	11	032	42·3	41·4	0·9	0·0	0·0			10·0	
	12	014	42·3	41·2	1·1	0·0	0·0			10·0	Very dark.
	13	29·998	41·9	40·6	1·3	0·0	0·0			10·0	
	14	974	43·6	42·3	1·3	0·0	0·0			10·0	
	15	958	43·3	42·2	1·1	0·0	0·0			10·0	Streaks of light to N. and E.
	16	946	43·7	42·7	1·0	0·0	0·0			10·0	
	17	915	44·0	43·0	1·0	0·1	0·0	18		10·0	Light rain.
	18	893	43·4	42·4	1·0	0·1	0·0	19		10·0	Rain.
	19	877	43·2	42·3	0·9	0·0	0·0			10·0	
	20	851	43·2	42·2	1·0	0·0	0·0			10·0	Light Rain.
	21	836	43·9	43·0	0·9	0·0	0·0		19 : — : —	10·0	Nearly homogeneous scud.
	22	826	44·1	43·0	1·1	1·0	0·1	18		10·0	Id.
	23	816	44·1	43·2	0·9	0·2	0·1	15	19 : — : —	10·0	Scud.
12	0	813	45·0	44·0	1·0	0·1	0·0	20		10·0	Id., slight drizzle commencing.
	1	788	46·0	44·5	1·5	0·1	0·0	20	20 : 28 : —	10·0	Id. to SE.; dense cirro-stratus.
	2	792	44·9	44·2	0·7	0·0	0·0		24 : — : —	10·0	Thin scud; thick cirro-stratus; light rain.
	3	792	44·4	44·0	0·4	0·0	0·0		26 : — : —	10·0	Scud; dense mass of clouds above.
	4	793	44·0	43·1	0·9	0·0	0·0			10·0	Uniform mass of cirro-strati; scud to SE.
	5	800	43·0	41·9	1·1	0·0	0·0			10·0	Id., red at sunset.
	6	805	42·9	41·2	1·7	0·0	0·0			10·0	Scud.
	7	819	41·0	39·6	1·4	0·0	0·0			6·0	Haze; clouds on horizon.
	8	828	37·7	37·1	0·6	0·0	0·0			4·0	Clouds on horizon.
	9	820	37·8	37·3	0·5	0·0	0·0			1·0	Id.
	10	826	37·6	37·2	0·4	0·0	0·0			1·0	Id.
	11	835	36·9	35·7	1·2	0·0	0·0			1·5	Id.
	12	842	36·2	34·9	1·3	0·0	0·0			1·5	Cirro-strati to E.
	13	29·852	32·5	32·4	0·1	0·0	0·0			0·5	Cirro-strati to E.
	14	858	32·5	32·0	0·5	0·0	0·0			0·2	Id.
	15	867	29·9	...	...	0·0	0·0			0·2	Cirro-strati and cirrous-haze on horizon.
	16	871	31·0	...	...	0·0	0·0			0·1	Id.
	17	871	30·0	...	...	0·0	0·0			0·2	Id.
	18	877	30·0	...	...	0·0	0·0			0·2	Patches of cirro-cumuli and cirri.
	19	880	29·7	...	...	0·0	0·0			0·1	Patches of cirro-strati.
	20	899	34·6	...	...	0·0	0·0			0·2	Masses of cirro-strati and cirri.
	21	919	32·7	...	...	0·0	0·0			0·5	Id.
	22	935	37·3	35·8	1·5	0·2	0·2			1·0	Cirro-cumulous-scud; cumulo-strati on E. horizon.
	23	954	36·7	35·0	1·7	0·2	0·2		31 : — : —	0·2	Cirrous-haze to E.; scud to SE.
13	0	916	36·9	35·9	1·0	0·0	0·0			0·2	Scud on horizon.
	1	933	39·8	36·7	3·1	0·0	0·0			0·2	Haze on horizon.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Jan. 12d 22h. The wind blowing at least 0·2 lb., but there is no indication by the anemometer.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
13	2	29·938	40·2	37·3	2·9	0·0	0·0			0·2	Patches of cirri to E.
	3	938	40·9	37·2	3·7	0·1	0·1	30	0 : — : —	3·0	Scud ; cumulo-strati on E. horizon.
	4	948	39·0	36·2	2·8	0·0	0·0			1·5	Cumuli and scud on horizon.
	5	953	36·7	34·8	1·9	0·0	0·0		0 : — : —	3·0	Scud ; cumuli and cirrous-haze to N. and E.
	6	968	36·4	34·6	1·8	0·2	0·2	31	0 : — : —	3·0	Id.
	7	978	38·6	36·1	2·5	0·3	0·2	30		5·0	Id.
	8	29·997	36·7	36·0	0·7	0·8	0·0	31		9·0	A shower of rain lately.
	9	30·020	36·6	36·0	0·6	0·0	0·0			9·5	Showers.
	10	040	36·6	35·9	0·7	0·0	0·0	0		9·7	Id.
	11	056	35·7	34·7	1·0	0·1	0·1	0	0 : — : —	1·0	Masses of scud.
	12	071	36·0	33·9	2·1	0·6	1·0	0		1·0	Id.
14	3	30·229				1·9					
	13	30·234	24·7	24·6	0·1	0·0	0·0			0·0	Clear.
	14	221	23·5	23·4	0·1	0·0	0·0			0·2	Haze on horizon.
	15	216	22·7	22·5	0·2	0·0	0·0			0·0	Clear.
	16	207	22·3	22·0	0·3	0·0	0·0			0·0	Id.
	17	198	22·5	22·3	0·2	0·0	0·0			0·0	Id.
	18	186	23·7	23·3	0·4	0·0	0·0			0·2	Clouds to SE.
	19	186	24·0	23·7	0·3	0·0	0·0			0·0	Clear.
	20	181	22·7	22·7	...	0·0	0·0			0·2	Cirri and cirrous-haze to SE., tinged with red.
	21	192	24·6	24·0	0·6	0·0	0·0			6·0	Thin woolly and linear cirri.
	22	191	26·1	25·6	0·5	0·0	0·0		— : — : 4	7·0	Id., moving slowly.
	23	191	27·6	27·0	0·6	0·0	0·0		— : — : 4	3·0	Id., id.
15	0	179	31·1	30·6	0·5	0·0	0·0			2·0	Linear cirri and cirrous-haze.
	1	149	32·8	32·0	0·8	0·0	0·0			3·0	Woolly cirri and cirrous-haze.
	2	132	35·8	34·2	1·6	0·0	0·0			4·0	Id. ; cirro-strati.
	3	128	36·6	35·1	1·5	0·0	0·0		— : — : 0	4·0	Woolly and linear cirri, cirro-strati.
	4	131	35·6	34·6	1·0	0·0	0·0		— : 0 : —	7·0	Cirro-cumulo-strati, patches of cirri.
	5	144	33·7	33·0	0·7	0·0	0·0		— : 0 : 0	8·0	Id., cirro-cumuli, cirri, cirro-strati.
	6	136	31·6	32·5	...	0·0	0·0			3·0	Id., linear cirri.
	7	139	32·2	32·3	...	0·0	0·0			0·2	Haze on E. horizon.
	8	146	31·7	31·4	0·3	0·0	0·0			0·0	Clear.
	9	139	31·7	31·3	0·4	0·0	0·0			0·0	Id.
	10	143	29·6	29·6	...	0·0	0·0			0·0	Id.
	11	142	30·3	...	...	0·0	0·0			1·0	Cirro-strati to N.
	12	129	32·2	31·8	0·4	0·0	0·0			1·0	Streaks of cirri to N.
	13	30·123	31·2	...	...	0·0	0·0			2·0	Scud to NW. ; streaks of cirri.
	14	123	32·7	32·1	0·6	0·0	0·0			9·5	Scud ?
	15	104	34·5	32·6	1·9	0·0	0·0		26 : — : —	9·0	Id.
	16	096	34·0*	33·8	0·2	0·0	0·0			10·0	Id.
	17	076	33·2	33·1	0·1	0·0	0·0			0·2	Streaks of cirri near horizon.
	18	072	32·3	...	...	0·0	0·0			0·2	Id.
	19	082	31·1	...	...	0·0	0·0			0·5	Id.
	20	075	30·1	...	...	0·0	0·0			3·0	Linear cirri ; scud to SE.
	21	075	30·2	...	...	0·0	0·0			6·0	Scud to SE. and on Cheviot ; cirro-cumuli to E.
	22	071	29·8	...	...	0·0	0·0		— : — : 31	8·0	Varieties of cirri ; cumuli, scud on Cheviot.
	23	102	32·2	31·9	0·3	0·0	0·0		— : 28 : —	10·0	Thick woolly cirro-strati, striated to SE.
16	0	075	33·3	32·4	0·9	0·0	0·0		— : — : 28	8·0	Cirri, cirro-strati, cirro-cumuli.
	1	065	32·9	32·3	0·6	0·0	0·0		— : — : 0	6·0	Woolly cirri, cirrous-haze on horizon.
	2	045	35·0	34·0	1·0	0·0	0·0		— : — : 0	6·0	Id.
	3	024	34·7	34·5	0·2	0·0	0·0		— : — : 30	8·0	Cirro-cumuli ; cirrous-haze and woolly cirri.
	4	028	34·5	34·0	0·5	0·0	0·0		— : 31 : —	9·0	Watery cir.-cum.-str. ; cirro-strati ; cirrous-haze
	5	035	32·6	32·4	0·2	0·0	0·0		— : 31 : —	9·5	Id. ; cirrous-haze.
	6	034	31·8	31·5	0·3	0·0	0·0			2·0	Streaks of linear cirri.
	7	042	30·1	...	...	0·0	0·0			1·0	Id. to W.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
16	8	30·045	29·0	29·6	...	0·0	0·0			1·0	Linear cirri; stars rather dim.
	9	057	28·7	28·9	...	0·0	0·0			2·0	Id.; id.
	10	054	30·8	30·9	...	0·0	0·0			6·0	Cirro-strati and thin cirri.
	11	053	29·7	29·8	...	0·0	0·0			3·0	Id.
	12	041	30·6	30·4	0·2	0·0	0·0			6·0	Cirrous clouds.
	13	30·030	31·5	31·3	0·2	0·0	0·0			4·0	Cirrous clouds; hazy.
	14	023	33·6	32·5	1·1	0·0	0·0			7·0	Id.; id.
	15	014	35·1	34·6	0·5	0·0	0·0			9·5	Id.
	16	020	35·7	35·0	0·7	0·0	0·0			10·0	Id.
	17	006	38·1	37·1	1·0	0·0	0·0			5·0	Id.
	18	30·001	37·3	36·8	0·5	0·0	0·0			0·5	Thin cirro-strati on horizon.
	19	29·995	36·7	36·3	0·4	0·0	0·0			0·5	Id.
	20	29·998	35·0	35·0	...	0·0	0·0		20 : — : —	6·0	Scud to SE.; woolly and diffuse cirri.
	21	30·020	34·9	34·9	...	0·0	0·0		28 : — : —	9·5	Scud; linear and mottled cirri; cirrous-haze.
	22	033	37·7	37·7	...	0·0	0·0			9·5	Woolly and linear cirri; cirro-strati; cirrous-haze.
	23	044	37·4	37·6	...	0·0	0·0			7·0	Woolly cirri, cirrous-haze; scud on S. horizon.
17	0	030	40·3	39·9	0·4	0·0	0·0			7·0	Woolly cirri and cirrous-haze.
	1	30·024	42·5	41·3	1·2	0·0	0·0			7·0	Id.
	2	29·996	44·1	42·7	1·4	0·0	0·0	20	— : — : 2	7·0	Thin cirri, ribbed in some places.
	3	991	43·5	42·0	1·5	0·0	0·0	20	— : — : 2	6·0	Diffuse cirri and cirrous-haze.
	4	990	41·1	40·3	0·8	0·0	0·0	20	— : — : 2	7·0	Diffuse cirri.
	5	986	36·4	36·6	...	0·0	0·0		— : — : 2	7·0	Id.
	6	983	35·6	35·0	0·6	0·0	0·0		— : — : 2	4·0	Id., much tinged with red.
	7	983	34·0	33·8	0·2	0·0	0·0			4·0	Id.
	8	969	35·8	35·6	0·2	0·0	0·0			3·0	Id.
	9	965	34·1	34·0	0·1	0·0	0·0			0·5	Id.
	10	969	33·1	33·1	...	0·0	0·0			0·5	Hazy.
	11	962	33·1	33·0	0·1	0·0	0·0			0·5	Id.
	12	962	33·2	32·9	0·3	0·0	0·0			0·0	Stars bright.
	13	29·950	32·9	32·5	0·4	0·0	0·0			0·2	Stars bright; streaks of cirri to N.
	14	953	32·5	32·1	0·4	0·0	0·0			0·1	Id.; id.
	15	936	34·1	33·7	0·4	0·0	0·0			0·0	Id.
	16	934	34·0	33·6	0·4	0·2	0·1	23		0·1	Id.; cirri to S.
	17	919	34·4	33·8	0·6	0·2	0·1	20		0·1	Id.; id.
	18	915	33·7	33·3	0·4	0·2	0·1	20		0·0	Id.
	19	914	39·5	38·3	1·2	0·2	0·1	20		0·2	Id.; id.
	20	919	39·3	38·3	1·0	0·1	0·1	20	— : — : 26	3·0	Woolly and linear cirri; cirro-cumuli.
	21	925	41·2	39·7	1·5	0·5	0·2	20	25 : 26 : —	4·0	Pat. of scud; mottled cir.-str. in zen.; cir.-cum., red.
	22	907	43·3	41·7	1·6	0·3	0·2	21	25 : 25 : —	7·0	Scud; cir.-cum.-str., cirro-cumuli, cirro-strati.
	23	910	45·6	43·0	2·6	0·3	0·6	22	24 : 26 : 26	3·5	Id.; cirro-cumuli, cirro-strati, mottled cirri.
18	0	886	45·8	43·0	2·8	1·1	0·3	21	25 : 25 : —	2·0	Id.; id., id., id.
	1	875	47·0	43·5	3·5	2·4	0·2	22	24 : — : —	8·0	Id., loose cumuli; cirri.
	2	825	47·1	43·4	3·7	0·6	1·8	23	24 : — : —	4·0	Id., id.; id.
	3	799	47·6	43·1	4·5	3·2	1·5	25	26 : — : —	8·5	Thick scud, loose cumuli; patches of cirri.
	4	791	46·6	43·0	3·6	1·7	0·2	20	25 : — : —	6·5	Id., id.
	5	751	46·6	42·2	4·4	3·2	2·7	23	24 : — : —	8·0	Scud; sky milky.
	6	743	46·0	42·4	3·6	2·4	1·5		24 : — : —	9·0	Id.; id.
	7	731	45·2	41·8	3·4	2·0	0·4	26	24 : — : —	4·0	Id.
	8	714	45·9	41·8	4·1	1·1	2·7	21		10·0	Light rain.
	9	681	45·5	42·2	3·3	2·3	2·2	24		10·0	Scud.
	10	662	45·1	41·3	3·8	4·4	1·8	24		0·2	Id.
	11	652	47·0	42·9	4·1	3·3	2·6	24	24 : — : —	6·0	Id.
	12	620	48·2	45·0	3·2	3·5	2·9			10·0	Id.
	13	29·592	48·4	44·6	3·8	6·2	4·2	27		4·0	Scud.
	14	603	45·5	41·0	4·5	3·7	1·0	21		0·0	Clear.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
18	15	29·653	43·4	39·3	4·1	1·3	2·0	20		2·0	Scud to S.
	16	648	43·0	38·7	4·3	3·0	2·4	23		2·0	Id.; haze to S. and E.
	17	647	42·6	38·4	4·2	1·7	1·1	26		2·0	Id.
	18	623	40·8	38·0	2·8	1·0	0·6	21		9·0	Scud.
	19	611	41·0	38·0	3·0	0·9	1·2	24		5·0	Id. to S. and E.
	20	596	41·0	38·0	3·0	1·2	0·7	23		10·0	Id.
	21	571	42·1	38·8	3·3	1·8	1·1	23	27 : — : —	10·0	Id.; cirrous clouds.
	22	563	43·0	39·3	3·7	2·4	2·4	23	27 : 28 : —	10·0	Id.; woolly cirro-cumuli; linear cirri, cirrous-haze.
	23	558	43·1	39·3	3·8	3·3	2·1	28		10·0	The same; cirrous clouds more homogeneous.
19	0	542	43·3	39·3	4·0	3·9	3·0	28		10·0	Id.; id.
	1	554	42·7	39·7	3·0	2·5	1·5	28		10·0	Id.; light rain since 0h.
	2	570	42·9	38·1	4·8	2·5	1·3	29	29 : 29 : —	9·7	Thin scud; cir.-cum.-scud; cir.-str.; cir.; cir.-haze.
	3	591	39·5	36·4	3·1	2·7	3·3	30	30 : — : —	9·9	Scud; cirri; nimbi; commencing to rain and hail.
	4	625	38·7	35·6	3·1	1·4	0·1	30	29 : — : —	9·8	Thin scud; cirri; showers passed to SSE.
	5	641	38·3	35·4	2·9	0·0	0·0			10·0	Scud; cirri.
	6	666	38·3	35·2	3·1	0·2	0·0		26 : — : —	10·0	Id.
	7	656	36·3	34·1	2·2	0·0	0·0			7·0	Cirrous-haze; cirro-strati.
	8	664	35·4	33·5	1·9	0·0	0·0			7·0	Snow from a very heavy cloud.
	9	678	35·4	33·3	2·1	0·0	0·0			9·0	Scud.
	10	703	35·2	33·0	2·2	0·0	0·0			10·0	Id.
	11	726	34·9	31·8	3·1	0·1	0·1	29		8·0	Id.
	12	731	34·0	31·1	2·9	0·2	0·2	29		9·0	Id.
	13	29·751	34·4	30·9	3·5	0·2	0·2	30		8·0	Scud.
	14	747	33·1	30·7	2·4	0·2	0·0			10·0	Id.
	15	745	32·3	29·6	2·7	0·2	0·0			2·5	Id.
	16	751	33·1	29·7	3·4	0·0	0·0			8·0	Id.
	17	764	33·8	29·3	4·5	0·1	0·1	27		2·0	Id.
	18	755	32·1	28·9	3·2	0·2	0·2	27		2·0	Id.
	19	765	32·4	28·8	3·6	0·2	0·0			2·0	Id.
	20	778	33·7	29·8	3·9	0·2	0·2	28	29 : — : —	6·5	Id.
	21	801	32·3	29·4	2·9	0·2	0·1	28	29 : — : —	4·0	Id.; cirro-strati, cirrous-haze.
	22	802	31·9	30·7	1·2	0·8	0·4	27		2·0	Id.; linear and mottled cirri.
	23	810	35·0	31·3	3·7	0·5	0·1	26		1·5	Id.; cirrous-haze.
20	0	818	37·3	33·0	4·3	0·0	0·0		30 : — : —	8·0	Id.; linear and mottled cirri; cirro-strati.
	1	827	38·3	33·7	4·6	0·3	0·0		30 : — : —	9·0	Id.; cirri.
	2	817	39·0	34·3	4·7	0·5	0·5	28	30 : — : —	10·0	Id.
	3	807	38·6	34·0	4·6	0·4	0·2	24	31 : — : —	10·0	Id.; linear and woolly cirri.
	4	808	37·1	33·1	4·0	0·0	0·0		31 : — : —	9·0	Loose scud; cirro-stratous-scud; cirro-strati.
	5	803	35·8	32·5	3·3	0·0	0·0		30 : — : —	10·0	Cirro-cumulous-scud; linear cirri and cirro-strati.
	6	803	35·1	32·8	2·3	0·0	0·0			10·0	Thick mass of cirro-stratus.
	7	795	34·7	32·7	2·0	0·0	0·0			10·0	Dark.
	8	766	35·0	33·0	2·0	0·0	0·0			8·0	Some stars dimly visible.
	9	768	36·6	34·6	2·0	0·1	0·0			10·0	Dense mass of clouds.
	10	747	37·0	35·6	1·4	0·0	0·0			10·0	Id.
	11	724	36·9	35·9	1·0	0·0	0·0			8·0	Id.
	12	694	35·9	35·5	0·4	0·0	0·0			1·5	Haze on horizon.
21	0					0·4					
	13	29·693	35·7	35·0	0·7	0·8	0·0	22		0·2	Streaks of cirri near horizon.
	14	697	32·3	32·1	0·2	0·0	0·0			0·1	Id.
	15	690	31·6	31·2	0·4	0·0	0·0			0·2	Id.
	16	683	30·3	30·3	...	0·0	0·0			0·7	Cirri to N.
	17	677	30·3	30·8	...	0·0	0·0			1·0	Id. to E.
	18	676	30·3	31·8	...	0·0	0·0			2·0	Id. to N. and E.
	19	679	33·6	32·6	1·0	0·0	0·0	21		9·5	Cirri?; stars seen in zenith.
	20	683	34·0	33·8	0·2	0·0	0·0	21		10·0	Cirrous clouds?

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
21	21	29·691	34·6	34·4	0·2	0·0	0·0		—: 0 :—	9·7	Cir.-str.-scud, red to SE.; cir.-cum.-str. to N.
	22	689	35·3	34·7	0·6	0·0	0·0		—: 2 :—	9·5	Cirro-cumulo-strati.
	23	685	38·2	36·9	1·3	0·0	0·0		—: 1 :—	9·7	Id.
22	0	700	37·6	36·8	0·8	0·0	0·0	20	—: 1 :—	5·0	Id.
	1	695	41·8	39·1	2·7	0·0	0·0	28		2·5	Id., woolly cirri.
	2	690	45·6	41·4	4·2	0·2	0·0		—: 1 :—	5·0	Id., id.
	3	695	45·8	41·4	4·4	0·2	0·0		—: 1 : 1	6·0	Id., id.
	4	712	45·2	41·5	3·7	0·1	0·0		—: 30 :—	9·7	Id.
	5	719	43·6	40·4	3·2	0·0	0·0		—: 30 :—	10·0	Id.
	6	726	43·3	39·9	3·4	0·0	0·0	30	—: 30 :—	9·0	Id.
	7	737	42·4	39·3	3·1	0·0	0·0	28		8·5	Id.; stars indistinct.
	8	756	40·7	38·9	1·8	0·0	0·0			10·0	Cirrous clouds.
	9	760	40·7	38·6	2·1	0·0	0·0			9·0	Id.; stars dim.
	10	777	38·8	37·7	1·1	0·0	0·0			6·5	Id.; id.
	11	794	39·3	38·0	1·3	0·0	0·0			10·0	Dark.
	12	801	39·4	38·2	1·2	0·0	0·0			10·0	Id.; a few drops of rain.
	13	29·803	38·7	37·8	0·9	0·0	0·0			10·0	Dark; a few drops of rain.
	14	811	38·9	38·0	0·9	0·0	0·0			10·0	Id.; id.
	15	819	38·4	37·8	0·6	0·0	0·0			10·0	Id.; id.
	16	822	37·6	37·0	0·6	0·0	0·0			10·0	Id.; id.
	17	832	37·3	36·9	0·4	0·0	0·0			10·0	Id.
	18	828	37·1	36·9	0·2	0·0	0·0			9·5	A few stars visible.
	19	823	37·0	36·6	0·4	0·0	0·0			9·5	Id.
	20	839	36·9	36·5	0·4	0·0	0·0			10·0	Cirro-cumulous-scud.
	21	855	36·6	36·2	0·4	0·0	0·0	16	—: 24 :—	10·0	Id., having an internal motion.
	22	857	36·8	36·4	0·4	0·0	0·0	16		8·2	Id., clearing off, sky to SW.; cir.-str.
	23	860	35·7	36·0	...	0·0	0·0			1·2	Id.; woolly cirro-cumuli, cirri.
23	0	863	39·9	38·3	1·6	0·0	0·0	22	—: — : 28	2·5	Mottled and pectinated cirri and cirro-cumuli.
	1	866	40·7	39·7	1·0	0·0	0·0	20		3·0	The same; patches of cumuli to SE. [cir.-cum.-sc.
	2	862	43·3	40·1	3·2	0·0	0·0	18	20 : 28 :—	4·0	Zig-zag cirri, cirro-strati, cir.-cum.; scud, loose cum.,
	3	860	42·9	40·1	2·8	0·0	0·0	26	—: 20 :—	9·0	Cirro-cumulous-scud; cirri.
	4	863	40·9	39·8	1·1	0·0	0·0	18	—: 24 : 28	1·5	Id.; cirro-cumuli; patches of cirri.
	5	868	37·8	35·9	1·9	0·0	0·0	17	—: 26 :—	3·0	Id. to N.
	6	876	35·7	35·0	0·7	0·0	0·0	21	—: 25 :—	6·0	Id.
	7	884	32·0	32·3	...	0·0	0·0			1·5	Thin cirri to E.
	8	889	31·8	32·1	...	0·0	0·0			0·2	Cirrous-haze on E. horizon.
	9	898	31·1	31·0	0·1	0·0	0·0			0·0	Clear.
	10	903	28·9	30·1	...	0·0	0·0			0·0	Id.
	11	903	28·9	29·0	...	0·0	0·0			0·0	Id., hazy on horizon.
	12	908	29·9	29·2	0·7	0·0	0·0			0·0	Id., id.
	13	29·909	30·9	30·5	0·4	0·0	0·0			0·0	Clear, hazy on horizon.
	14	907	30·0	30·5	...	0·0	0·0			0·0	Id., id.
	15	912	30·0	29·7	0·3	0·0	0·0			0·0	Id., id.
	16	916	28·3	28·5	...	0·0	0·0			0·0	Id.
	17	909	27·7	27·5	0·2	0·0	0·0			0·0	Id.
	18	910	27·9	27·5	0·4	0·0	0·0			0·0	Id.
	19	895	28·3	28·4	...	0·0	0·0			0·0	Id.
	20	904	30·2	29·7	0·5	0·0	0·0			0·2	Cirro-strati on horizon.
	21	912	29·4	29·7	...	0·0	0·0	20		0·5	Id.
	22	914	29·0	29·6	...	0·0	0·0			0·5	Id.
	23	921	34·5	32·5	2·0	0·0	0·0			0·2	Cirro-strati and cirrous-haze on E. horizon.
21	0	922	37·0	36·1	0·9	0·0	0·0	20		0·1	Id. to E.
	1	920	40·3	38·8	1·5	0·0	0·0			1·0	Scud to S., SW., and on Cheviot; haze on E. horizon.
	2	918	41·9	40·8	1·1	0·0	0·0	20		0·5	Patches of scud; cirrous-haze on E. horizon.
	3	912	42·9	40·9	2·0	0·1	0·1	18		0·5	Scud to NW. and on Cheviot; cir.-haze on E. hor.
	4	907	41·9	40·0	1·9	0·2	0·1	18	—: 22 :—	2·0	Cirro-cumulo-strati to W.; cirrous-haze to E.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1ʰ.	10ᵐ.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
24	5	29·912	38·2	37·5	0·7	0·2	0·0	18		2·0	Cirro-cumuli, cirro-strati; cirrous-haze to E.
	6	905	36·4	36·0	0·4	0·1	0·1	21		2·0	Cir.-cum. and cir.-str. to S. and SW.; woolly cirri.
	7	925	34·2	34·1	0·1	0·0	0·0			1·5	Cirro-strati to S. and W.; cirrous-haze on horizon.
	8	913	39·1	37·9	1·2	0·0	0·0			7·0	Cirro-cumulo-strati, woolly cirri; dark clouds to W.
	9	903	39·9	38·3	1·6	0·0	0·2	20	— : — : 28	9·5	Woolly cirri; cirro-cumuli, cirrous-haze to E.
	10	909	41·3	39·4	1·9	0·2	0·3			10·0	Scud and cirro-strati.
	11	916	41·9	40·0	1·9	0·5	0·4	20		7·0	Chiefly loose scud.
	12	931	42·9	41·0	1·9	1·2	0·9	20		10·0	Scud.
	13	29·923	41·8	40·8	1·0	0·6	0·0			9·0	Thin scud.
	14	921	42·7	41·6	1·1	0·3	0·0	20		9·5	Id.
	15	908	41·3	41·0	0·3	0·5	0·1	18	28 : — : —	4·0	Id.
	16	911	38·9	38·6	0·3	0·1	0·0	18		1·2	Cirrous-haze; stars dim.
	17	899	40·7	40·0	0·7	1·0	0·6	20		1·0	Cirro-strati on horizon; stars dim.
	18	891	42·2	41·3	0·9	0·9	0·3	20		10·0	Scud, &c.
	19	873	41·3	40·4	0·9	0·9	0·5	18		10·0	Id.; cirrous clouds.
	20	848	41·9	41·0	0·9	0·6	1·1	19	21 : — : —	10·0	Thin scud; homogeneous sheet of thin cirri.
	21	838	43·5	42·4	1·1	1·1	0·3	20	21 : — : —	10·0	Scud.
	22	807	44·3	43·3	1·0	1·3	0·5	20	21 : — : —	10·0	Id.
	23	817	44·9	43·9	1·0	0·6	0·3	20	22 : — : —	10·0	Id.; drops of rain.
25	0	768	46·1	44·0	2·1	1·5	1·1	19	21 : — : —	10·0	Id.
	1	727	46·3	44·2	2·1	1·6	1·3		21 : — : —	10·0	Id.
	2	671	44·8	44·4	0·4	2·5	2·1	20	20 : — : —	10·0	Loose scud; denser scud above; heavy shower since 1ʰ.
	3	642	46·1	45·0	1·1	2·0	1·6	20	23 : — : —	9·9	Loose ragged scud.
	4	653	48·0	45·7	2·3	2·7	2·3	24	26 : — : —	9·0	Loose scud.
	5	697	47·3	44·4	2·9	1·8	1·2	25	26 : — : —	3·0	Id.; cirro-strati.
	6	770	46·8	43·0	3·8	3·1	3·5	30	30 : — : —	2·0	Scud; cirri to W., tinged with red.
	7	824	44·3	41·0	3·3	1·1	0·0		— : — : 24	9·0	Woolly cirri; cirro-strati and cirrous-haze to E.
	8	857	42·9	40·4	2·5	0·0	0·0			2·5	Thin cirro-cumulous-scud round horizon.
	9	892	41·5	39·4	2·1	0·0	0·0			5·0	Id.; cirro-strati to S. and E.
	10	925	38·6	37·1	1·5	0·0	0·0			1·0	Cirrous-haze.
	11	......	...	...	...	...	...			...	
	12	939	36·5	34·7	1·8	0·2	0·0			1·0	Cirro-strati and cirrous-haze on horizon.
	13	29·950	36·1	33·9	2·2	0·0	0·0			0·5	Cirro-strati and cirrous-haze on horizon.
	14	950	37·1	34·7	2·4	0·1	0·0			0·5	Id.
	15	950	38·7	35·9	2·8	0·2	0·1	21		0·2	Cirrous haze on horizon.
	16	944	38·1	36·0	2·1	0·2	0·1	23		0·0	Hazy near horizon.
	17	950	38·7	36·3	2·4	0·4	0·0	22		0·0	Id.
	18	953	37·7	36·1	1·6	0·0	0·0	22		0·0	Id.
	19	956	35·9	34·9	1·0	0·2	0·0			0·2	Cirro-strati?
	20	944	40·0	37·5	2·5	0·4	0·4	22		0·5	Thin cirri; cirro-strati to E. and SE.
	21	954	39·6	37·3	2·3	0·8	0·4	22	24 : — : 29	5·0	Woolly and mixed cirri, cir.-cum.; scud on Cheviot.
	22	960	41·2	38·2	3·0	0·8	0·3	23		7·0	Cirri, cirro-cumuli, cirro-strati.
	23	960	43·6	39·6	4·0	1·3	0·9	26		4·0	Cirri, cirro-strati.
26	0	950	44·9	40·7	4·2	1·8	2·3	26		4·0	Reticulated cirri, cir.-str. near hor., scud on Cheviot.
	1	971	45·9	41·2	4·7	1·8	1·8	26		0·7	Cirri and cirro-strati on horizon.
	2	29·979	46·3	42·0	4·3	2·8	0·2	25	27 : 29 : —	1·0	Varying patches of scud; cirri, cirro-strati to S.
	3	30·002	46·5	42·4	4·1	0·4	0·2	26	27 : 29 : —	3·5	Scud; woolly cirro-strati; fine cirri.
	4	29·998	46·3	42·1	4·2	1·6	0·8	25		6·0	Id.; id; id.
	5	30·009	44·6	41·1	3·5	0·6	0·0	25	27 : 29 : —	8·0	Occasional patches of scud; woolly cirro-strati; cirri.
	6	026	41·1	39·9	1·2	0·0	0·0	20	29 : — : —	7·0	Scud, causing a lunar corona; cirri, tinged with red.
	7	024	42·4	40·7	1·7	0·0	0·0			0·5	Patches of scud and cirri.
	8	024	43·8	41·7	2·1	0·2	0·1	23	— : 30 : —	5·0	Cirro-cumulo-strati and cirro-cumuli; lunar corona.
	9	016	42·1	40·9	1·2	0·2	0·1	24		1·0	Cirro-strati to SW.
	10	012	42·3	41·2	1·1	0·0	0·0			3·0	Light cirri; cirro-strati near horizon.
	11	001	41·8	40·9	0·9	0·0	0·0			4·0	Cirro-strati near horizon; linear cirri in zenith.
	12	013	45·9	43·7	2·2	0·3	0·1	22		10·0	Scud.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Jan. 25ᵈ 21ʰ. Woolly and mixed cirri and cirro-cumuli radiating from SSE.; fine cirri above in long hairs radiating from SW by S.; these hairs form portions of ellipses which have their centre about the SSE. point of the horizon.

Gott. Mean Time.		BARO-METER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
26	13	29·977	46·1	43·1	3·0	0·5	0·2	23		10·0	Scud.
	14	921	46·0	42·8	3·2	0·5	0·3	20		9·7	Id.; sky to NW.
	15	923	45·1	42·3	2·8	0·5	0·8	22		9·0	Id.; id.
	16	922	46·1	42·7	3·4	0·9	0·5	24		9·7	Id.
	17	893	45·4	42·5	2·9	0·2	0·1	20		8·0	Id.
	18	889	46·8	44·3	2·5	0·3	0·1	21		10·0	Light rain.
	19	878	48·0	45·5	2·5	0·7	0·3	22		9·7	Thick scud.
	20	881	48·9	46·0	2·9	0·5	0·2	22	24 : — : —	9·0	Scud; cirrous clouds, slightly tinged with red.
	21	893	49·0	46·6	2·4	0·5	0·4	23	24 : — : —	10·0	Id.; a few drops of rain.
	22	882	49·2	46·9	2·3	0·5	0·2	23	25 : — : —	10·0	Thin loose scud very low; thick cirrous clouds on hor.
	23	884	49·9	46·5	3·4	0·4	0·4	22	26 : 28 : —	10·0	Loose scud to W.; thick cirro-stratus.
27	0	868	49·9	47·0	2·9	0·7	0·4	22		10·0	Dense mass of cirro-strati; scud on SW. horizon.
	1	869	50·1	46·9	3·2	0·6	0·3	24		10·0	Id.; patches of scud to W.
	2	870	49·9	46·5	3·4	0·4	0·1	24	26 : — : —	10·0	Id.; scud. [SSE; scud.
	3	856	50·0	46·1	3·9	0·3	0·4	24	26 : — : —	10·0	Dense cirro-strati, having a radiated appearance from
	4	851	48·9	45·5	3·4	0·5	0·3	22	26 : — : —	10·0	Patches of ragged scud; dense homogeneous cir.-str.
	5	856	48·1	44·9	3·2	0·5	0·0			10·0	Dense mass of cirro-strati and cirro-stratous-scud.
	6	847	47·4	44·8	2·6	0·2	0·0	20		10·0	Thick semifluid cir.-str.-scud; drops of rain; breaking.
	7	821	47·3	44·9	2·4	0·0	0·0		26 : — : —	9·7	Scud, causing a slightly coloured lunar corona.
	8	816	47·7	46·2	1·5	0·1	0·0	18		10·0	Id.
	9	782	48·8	46·7	2·1	0·2	0·1	21		10·0	Id.
	10	760	48·8	46·7	2·1	0·3	0·0	20	— : 24 : —	9·7	Woolly cirro-cumuli; scud on horizon.
	11	754	48·0	46·5	1·5	0·2	0·0	20		10·0	Cirrous clouds.
	12	714	47·9	46·4	1·5	0·5	0·1	18		10·0	Id.
28	0	29·456	...	...	...	4·8	...	23			
	13	29·575	37·9	35·6	2·3	3·7	0·3	25		2·0	Thin woolly cirri; lunar corona.
	14	595	38·3	36·0	2·3	0·6	0·3	24		3·0	Id.
	15	601	37·5	35·2	2·3	0·2	0·0			0·0	Quite clear.
	16	607	36·0	34·4	1·6	0·2	0·1	25		0·2	Cirro-strati to NW.; haze on E. horizon.
	17	610	35·6	34·5	1·1	0·1	0·0			6·0	Thin scud or cirrous clouds.
	18	611	33·6	32·9	0·7	0·1	0·0			1·0	Thin clouds.
	19	621	35·4	34·3	1·1	0·0	0·0			6·0	Id.
	20	607	38·6	36·6	2·0	0·1	0·1	17	26 : — : —	10·0	Thin scud; cirro-strati to E., tinged with red.
	21	601	38·8	37·1	1·7	0·3	0·3	19		10·0	Dense homogeneous mass; drops of rain.
	22	574	39·1	38·7	0·4	0·3	0·2	19	22 : — : —	10·0	Dense cirro-strati; scud; light showers.
	23	531	39·9	39·2	0·7	0·1	0·2	19	22 : — : —	10·0	Scud.
29	0	477	43·2	41·9	1·3	0·8	0·1	18	20 : — : —	10·0	Id.
	1	389	44·2	43·1	1·1	1·1	1·5	18	20 : — : —	10·0	Id.
	2	343	45·3	44·3	1·0	4·0	3·0	20	20 : — : —	10·0	Id.; occasional patches of sky; light rain.
	3	285	46·1	45·8	0·3	3·6	3·8	20	20 : — : —	10·0	Id.; light rain.
	4	238	47·0	46·0	1·0	3·4	1·2	19	20 : 23 : —	9·8	Two currents of scud; sky to E.
	5	208	52·0	48·3	3·7	3·4	5·0	22	23 : 26 : 26	8·5	Pat. of scud; cirro-cumulous-scud; varieties of cirri.
	6	203	51·0	46·7	4·3	4·5	3·4	22	24 : — : 26	2·0	Pat. of sc.; pat. of cir.; cir.-cum.; at 18h 7m haze and
	7	193	50·6	46·7	3·9	3·4	5·5	24	24 : — : —	9·0	Loose scud; cir.-haze; coloured lun. cor. [lun. cor.
	8	203	49·1	44·0	5·1	5·7	2·6	23		0·1	Patches of scud.
	9	203	47·6	42·3	5·3	4·2	3·6	24		0·1	Id.
	10	197	48·0	43·0	5·0	5·2	3·9	24	24 : — : —	5·0	Scud.
	11	183	47·4	43·0	4·4	5·2	4·4	23	25 : — : —	10·0	Id.
	12	183	46·9	42·0	4·9	5·5	4·0	24		4·0	Id. to S. and E.
	13	29·177	46·7	41·6	5·1	5·7	3·9	26	25 : — : —	2·0	Scud; haze on horizon.
	14	168	46·3	41·7	4·6	5·7	4·0	22	24 : — : —	2·5	Id.; a few drops of rain.
	15	184	45·7	42·0	3·7	4·4	3·9	24	24 : — : —	3·5	Id.
	16	198	44·9	41·4	3·5	3·2	2·2	25	26 : — : —	6·0	Id; shower since last observation.
	17	240	42·5	38·8	3·7	4·3	3·1	23		4·0	Thick scud to W. and N.; clear in zenith.
	18	291	39·8	37·1	2·7	2·3	2·5	27		4·0	Id.; light rain.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1^h.	10^m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29	19	29·299	38·3	36·1	2·2	1·5	2·1	24		1·5	Heavy clouds on horizon, shower after this.
	20	314	36·4	35·2	1·2	3·1	0·5	22		2·0	Mass of scud on Cheviot, scud in W., S., and E.
	21	328	38·9	36·5	2·4	1·6	1·0	22		2·0	Loose scud; mass of scud with cirrous top.
	22	350	36·0	35·4	0·6	1·9	0·6	22		3·0	Thin watery scud; denser scud to S. and SE.; rainbow.
	23	357	38·8	36·6	2·2	2·3	2·0	24		0·2	Scud.
30	0	363	40·3	37·2	3·1	2·4	2·0	25	26 : — : —	0·2	Loose scud.
	1	362	42·6	38·0	4·6	1·7	2·3	24	25 : — : —	3·0	Id.
	2	357	40·8	37·0	3·8	4·5	3·6	24	26 : — : —	2·5	Id.; passing showers. [N. and S.
	3	325	40·0	37·1	2·9	3·7	2·1	25	— : — : 26	8·0	Woolly and linear cirri; thin scud; loose cumuli to
	4	319	38·9	35·7	3·2	1·8	0·4	24	— : — : 25	7·5	Woolly cirri; thick to SW.
	5	308	37·0	35·0	2·0	0·9	0·0	16	26 : — : 24	8·0	Scud; woolly and diffuse cirri.
	6	277	35·8	34·3	1·5	0·9	0·0		— : — : 24	10·0	Diffuse cirri; scud.
	7	272	36·2	34·0	2·2	0·0	0·0			10·0	Thin scud.
	8	293	38·2	34·9	3·3	0·5	0·6	24		10·0	Scud.
	9	285	35·2	33·1	2·1	0·9	0·1	22		2·5	Patches of thin scud; haze on horizon.
	10	286	34·8	33·6	1·2	2·1	0·4	24		9·7	Scud; sky to N.
	11	314	33·7	32·1	1·6	1·6	0·2	24	25 : 25 : 25	4·0	Patches of scud; cirro-cumulous-scud; cirri.
	12	302	34·2	32·1	2·1	1·7	1·0	25	— : — : 25	6·5	Woolly cirri.
	13	29·328	33·8	31·7	2·1	3·3	1·1	26	— : — : 25	6·5	Woolly cirri; lunar halo.
	14	336	33·0	31·4	1·6	1·6	0·6	26	— : — : 25	6·0	Id.
	15	334	33·3	32·3	1·0	1·1	1·6	25	28 : — : —	6·0	Scud; cirri; a few flakes of snow.
	16	346	32·8	32·1	0·7	1·4	1·2	24	27 : — : —	6·0	Id.; id.
	17	364	32·0	31·5	0·5	1·5	0·9	25		3·0	Id.; id.
	18	363	32·0	31·6	0·4	1·6	0·3	25		2·0	Id.; id.
	19	359	32·0	31·7	0·3	1·2	0·6	24		6·0	Id.; id.
	20	377	31·2	30·7	0·5	0·7	0·4	23	— : 27 : —	5·0	Cir.-cum.-scud; cum.-str., nimbi, cumuli on E. hor.
	21	405	31·9	31·5 ?	0·4	1·6	1·2	28	28 : — : —	7·0	Scud; cirro-cumuli; snow after this.
	22	423	31·5	31·4 ?	0·1	4·1	1·6	28		2·0	Thick scud to SE.; cirro-cumuli to NE.
	23	461	32·3	32·1 ?	0·2	2·3	0·7	27		1·5	Cumulo-strati to E. and NE.
31	0	473	33·3	31·4	1·9	1·2	1·2	28		0·2	Cumulo-strati on NE. and E. horizon; scud to SW.
	1	483	34·4	30·3	4·1	1·9	1·1	28		4·0	Scud and loose cumuli; cumuli to E.
	2	499	33·5	31·3	2·2	2·2	1·9	28	28 : 28 : —	6·0	Id.; cir.-cum.-str.; cum.-st. to E.; snow lately.
	3	518	32·4	29·9	2·5	1·6	1·3	28	28 : — : —	3·0	Masses of scud; cumuli on E. horizon.
	4	528	31·8	30·2	1·6	1·4	1·9	28		2·0	Patches of scud; loose cumuli to S.; cum.-str. to E.
	5	549	30·7	28·0	2·7	1·6	0·5			1·5	Id.; cumulo-strati on E. horizon.
	6	557	28·6	26·2	2·4	0·7	0·4	28		0·2	Cum. on E. hor.; tinge of red to SW.; sky very clear.
	7	574	28·5	25·9	2·6	0·4	0·3	28		0·1	Patch of clouds to E.
	8	601	28·2	25·9	2·3	0·4	0·3	28	— : 28 : —	1·0	Cirro-cumulous-scud; cirrous-haze on horizon.
	9	613	28·9	26·3	2·6	0·5	0·5	28		6·5	The same; lunar corona.
	10	623	29·2	27·1	2·1	0·6	0·6	29	— : 30 : —	6·5	Cirro-cumulous-scud.
	11	636	28·6	26·0	2·6	0·4	0·4	28		1·0	Id. and cirro-strati to S.
	12	651	27·2	25·6	1·6	0·4	0·2	28		0·1	Cirro-strati on E. horizon.
	13	29·669	27·7	25·1	2·6	0·2	0·1	28	— : 30 : —	9·0	Cirro-cumulous-scud.
	14	678	31·0	27·4	3·6	0·4	0·5	28	0 : — : —	10·0	Scud.
	15	690	30·6	27·9	2·7	0·4	0·0		30 : — : —	9·5	Id.
	16	710	29·9	27·0	2·9	0·4	0·3	28	30 : — : —	2·5	Id., loose cumuli.
	17	732	30·1	27·3	2·8	0·5	0·0			0·1	Cirro-strati to SE.
	18	745	28·0	26·0	2·0	0·2	0·0			0·1	Id.
	19	756	28·3	26·3	2·0	0·2	0·1	28		1·0	Scud, &c. to S.
	20	787	28·0	25·9	2·1	0·1	0·0		2 : — : —	2·0	Loose scud to SE.
	21	813	26·3	25·2	1·1	0·0	0·0	16	2 : — : —	0·5	Scud; tops of cumuli seen above scud to E.
	22	834	29·0	27·0	2·0	0·0	0·0	26	2 : — : —	1·7	Cirro-cumulous-scud to E.
	23	841	31·0	29·3	1·7	0·0	0·0	20	2 : — : 30	1·0	Id.; streaks of cirri.
1	0	833	34·2	31·0	3·2	0·0	0·0	30		2·0	Id. to NE.; thin cirri.
	1	826	36·3	32·0	4·3	0·0	0·0	25		2·5	Id. to S. and E.; lin. cir. and cir.-haze.
	2	813	37·3	33·1	4·2	0·0	0·0	18	— : — : 30	7·0	Thin linear cirri; cir.-cum.-scud; part of sol. halo.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Jan. 30^d 14^h 59^m 20^s. A meteor shot from between Castor and Pollux.

Jan. 30^d 18^h 8^m. A flash of lightning seen above S by E. point of horizon; it seemed to be in a space between the horizon and a stratum of rather thick cirrous clouds, which are about 8° above the horizon; a brighter flash seen in a few minutes; no thunder heard.

Gott. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
1	3	29·788	36·4	33·2	3·2	0·0	0·0	18	— : — : 30	5·0	Thin linear cirri.
	4	773	34·1	31·9	2·2	0·0	0·0	18	— : 30 : —	5·0	Smoky scud on Cheviot; fine cirri; cir.-cum. of different sizes.
	5	752	32·9	31·2	1·7	0·1	0·0	18	— : 30 : —	8·5	Cir.-cum.-str. rad. from N by W. to S by E.; fine cirri, cir.-haze.
	6	732	29·0	...	...	0·0	0·0			8·0	As before; orange and purple-edged lunar corona.
	7	683	27·0	27·1	...	0·0	0·0			1·0	Thin cirrous clouds; coloured lunar corona.
	8	675	28·0	27·6	0·4	0·0	0·0		— : 28 : —	9·5	Cir.-cum.-str., lately small cir.-cum.; lunar corona.
	9	626	27·3	26·8	0·5	0·0	0·0		— : 26 : —	9·0	Id.; coloured lunar corona.
	10	586	25·7	25·1	0·6	0·0	0·0			9·0	Thin cirrous clouds and haze; lunar halo.
	11	549	26·6	26·1	0·5	0·0	0·0			10·0	Id.; id.
	12	521	28·2	27·5	0·7	0·0	0·0	20		10·0	Id.; id.
	13	29·486	28·9	27·9	1·0	0·0	0·0	15		10·0	Thin cirrous clouds and haze; halo gone.
	14	443	29·7	28·3	1·4	0·0	0·0	16		10·0	Moon quite obscured.
	15	398	29·9	29·2	0·7	0·0	0·0	22		10·0	Snowing.
	16	357	30·3	29·8	0·5	0·0	0·0			10·0	Heavy snow.
	17	326	30·2	29·9	0·3	0·0	0·0			10·0	Id.
	18	305	30·2	30·0	0·2	0·0	0·0			10·0	Id.
	19	287	29·0	29·0	...	0·0	0·0			10·0	Id.
	20	281	29·0	29·0	...	0·0	0·0			10·0	Id.
	21	287	30·1	30·0	0·1	0·0	0·0			10·0	Moderate snow.
	22	297	30·0	29·8	0·2	0·2	0·2	4		10·0	Id.
	23	315	31·7	31·0	0·7	0·2	0·0	4		10·0	Id.
2	0	325	33·0	31·8	1·2	0·0	0·0			10·0	Light Snow.
	1	336	33·6	32·6	1·0	0·0	0·0			10·0	Id.
	2	316	34·8	34·0	0·8	0·0	0·0			10·0	Snow ceased; snow $2\frac{3}{4}$ inches deep.
	3	363	35·8	34·6	1·2	0·0	0·0	3	3 : — : —	10·0	Patches of scud; dense uniform cirro-strati.
	4	390	34·1	33·8	0·3	0·2	0·1			10·0	Snowing a little.
	5	429	34·0	33·5	0·5	0·3	0·2	3		10·0	Id.
	6	475	33·2	32·9	0·3	0·6	0·4	2		10·0	Id.
	7	533	33·4	33·1	0·3	0·1	0·4	3		10·0	Id.
	8	587	33·2	32·9	0·3	0·0	0·0	2		10·0	Id.
	9	629	33·2	32·9	0·3	0·0	0·0	2		10·0	Fair.
	10	661	32·8	32·4	0·4	0·0	0·0			10·0	Scud.
	11	697	32·8	32·4	0·4	0·0	0·0			0·0?	Very thin haze; lunar halo, inner radius $21\frac{1}{4}$°.
	12	730	31·0	32·0	...	0·0	0·0			3·0	Scud to N.; fine cirri; lunar halo.
	13	29·752	30·8	31·0	...	0·0	0·0		2 : — : —	5·0	Scud.
	14	770	31·0	30·9	0·1	0·0	0·0		2 : — : —	9·8	Id.
	15	782	33·0	32·1	0·9	0·1	0·0	30	2 : — : —	3·0	Id.
	16	792	31·3	31·0	0·3	0·2	0·1	30	— : 31 : —	1·2	Cirro-cumulous-scud; scud to S.
	17	801	31·7	31·1	0·6	0·3	0·1	29		1·5	Cirri to S.; cirrous-haze on N. horizon.
	18	820	31·0	30·4	0·6	0·1	0·1	28	— : 0 : —	8·0	Cirro-cumulous-scud.
	19	821	34·1	32·3	1·8	0·3	0·1	28		9·9	Scud.
	20	824	33·5	32·1	1·4	0·3	0·4	28	— : 0 : —	5·0	Cirrous clouds.
	21	837	32·8	32·5	0·3	0·3	0·4	28	31 : — : —	9·5	Thin scud; cir.-cum.-str.; thick scud on horizon.
	22	837	36·3	34·8	1·5	0·4	0·2	30	— : 30 : —	9·9	Loose cir.-cum.-str.; ragged scud and cumuli on hor.
	23	859	36·5	34·4	2·1	0·2	0·3	29	1 : — : 30	6·5	Scud; cir.-cum.-str. to E.; woolly and curled cirri.
3	0	869	35·7	33·8	1·9	0·2	0·2	30		2·5	Cirri-cumulous-scud; cirri; cirro-stratus.
	1	862	36·4	33·8	2·6	0·3	0·2	30	— : 1 : —	5·0	Woolly cirri, and loose cirro-cumuli; cum.-str. to E.
	2	858	36·2	33·5	2·7	0·2	0·2	28	— : — : 0	7·0	Lin. and wo. cir. lying NW. to SE.; cum.-str. to E.; cir.-str. to S.
	3	851	34·9	32·6	2·3	0·3	0·0	28		1·5	Linear cirri; cumulo-strati to E.
	4	837	33·8	32·2	1·6	0·0	0·0	28		1·0	A line of undul., retic., and woolly cirri lying N by E. to S by W.
	5	841	32·7	30·9	1·8	0·0	0·0	29		1·0	As before; cumulo-strati to NE.; cirro-strati to S.
	6	817	28·8	28·0	0·8	0·0	0·0	24		0·2	Fine cirri and cirrous-haze near horizon.
	7	806	25·0	26·0	...	0·0	0·0			0·2	Id.
	8	877	23·1	23·2	...	0·0	0·0			1·5	Very thin cirri over the sky; lunar corona and halo.
	9	760	23·1	23·0	0·1	0·0	0·0			7·0	Id.; id.
	10	739	24·8	23·7	1·1	0·0	0·0			8·0	As before; rad. of halo $22\frac{1}{4}$°; coloured corona at 15m.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Feb. 1d 22h. The vane of the anemometer was found to be frozen up; the ice was removed.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
3	11	29·709	23·6	23·3	0·3	0·0	0·0			10·0	Cir.-cum. at 10^h 30^m, now homogen.; cir.-haze; faint
	12	670	24·9	23·9	1·0	0·0	0·0			10·0	Thick cir.-str. and haze; Moon nearly obscured. [halo.
4	0½	29·334	...	...	...	...	...			...	Nearly 4 inches of snow has fallen during the night;
	3′	316	...	...	...	...	...			...	the total depth now is 5¾ inches.
	13	29·267	28·2	28·0	0·2	0·0	0·0			2·0	Cirro-cumulo-strati.
	14	255	24·0	23·3	0·7	0·0	0·0		— : 31 : —	3·5	Thin cirro-cumulous-scud; woolly cirro-cumuli to S.
	15	240	22·6	21·9	0·7	0·0	0·0		— : — : 0	4·0	Woolly cirri; cirro-cumulo-strati to W.; lunar corona.
	16	232	24·6	24·3	0·3	0·0	0·0		— : — : 1	10·0	Id.; cir.-cum.-str., cir.-haze; lunar corona.
	17	223	25·0	24·7	0·3	0·0	0·0			10·0	Scud.
	18	216	24·4	24·2	0·2	0·0	0·0			8·0	Cirri lying NW. to SE.; cirro-cumuli; cirrous-haze.
	19	205	23·2	23·4	...	0·0	0·0			10·0	Scud, heavy clouds to E.; cirrous-haze to E.
	20	204	22·4	22·6	...	0·0	0·0		— : 2 : —	7·0	Cirro-cumulo-strati; masses of scud about horizon.
	21	220	25·9	25·7	0·2	0·0	0·0		— : 30 : —	8·0	Cirro-cumulous-scud.
	22	221	27·7	27·6	0·1	0·0	0·0		— : 30 : 30	9·0	Cirri and cir.-cum.-str.; cirro-strati; cirrous-haze.
	23	225	28·0	27·0	1·0	0·0	0·0			9·5	Id.; id.; id.
5	0	229	31·4	30·0	1·4	0·0	0·0		— : — : 28	9·5	Linear cirri and cirrous-haze; cirro-cumuli.
	1	231	32·9	31·8	1·1	0·0	0·0		— : 24 : 0	4·0	Cirro-cumulo-strati; woolly cirri; haze on horizon.
	2	231	34·0	31·3	2·7	0·0	0·0			0·5	Patches of cirri; cirro-strati and cirrous-haze on hor.
	3	233	35·8	32·5	3·3	0·0	0·0		— : — : 30	1·5	Linear, reticulated, and mottled cirri; cir.-str. on hor.
	4	238	34·9	32·2	2·7	0·0	0·0		— : 26 : —	2·0	Patches of cirri; cir.-cum.-str.; cirro-strati on hor.
	5	241	30·5	...	...	0·0	0·0	17	— : 30 : —	6·0	Cir.-cum.-str. radiating from NNW.; cir.-haze.
	6	234	29·3	28·3	1·0	0·0	0·0	26		10·0	Id. id. N by W.; id.; cirri.
	7	240	26·3	26·0	0·3	0·0	0·0			10·0	
	8	238	25·5	25·0	0·5	0·0	0·0			7·0	Linear cirri and cirrous-haze.
	9	243	23·6	...	...	0·0	0·0			7·0	Linear cirri radiating from NNW.
	10	251	21·8	22·0	...	0·0	0·0			4·0	Woolly cirri and cirrous-haze.
	11	254	20·0	20·3	...	0·0	0·0			5·0	Cirri; very faint lunar halo. [the Moon.
	12	265	22·0	22·8	...	0·0	0·0		— : 24 : —	4·0	Cir.-cum.-scud; coloured corona when clouds pass over
	13	29·269	21·1	21·2	...	0·0	0·0			7·0	Cirro-cumulous-scud.
	14	265	22·0	21·9	0·1	0·0	0·0		— : 30 : —	2·0	Id.
	15	277	19·8	20·0	...	0·0	0·0		— : 30 : —	2·0	Id.
	16	273	18·7	19·8	...	0·0	0·0			0·7	Id.
	17	275	16·5	17·0	...	0·0	0·0			0·0	Clear.
	18	279	18·9	19·9	...	0·0	0·0			0·0	Id.
	19	276	15·2	16·0	...	0·0	0·0			0·2	Sheet of cirri on E. horizon.
	20	277	16·3	17·0	...	0·0	0·0			0·2	Cirri and cumuli on E. horizon.
	21	281	16·6	16·7	...	0·0	0·0			1·0	Cirro-strati; cirro-cumulo-strati; cirrous-haze.
	22	287	18·9	18·9	...	0·0	0·0			0·5	Woolly cirro-cumuli to W.; hazy on horizon.
	23	286	21·7	21·2	0·5	0·0	0·0			0·2	Loose cumuli to E.
6	0	281	25·1	24·3	0·8	0·0	0·0			0·3	Id. to S. and SE.
	1	259	30·4	29·1	1·3	0·0	0·0	20		0·2	Id.
	2	244	35·1	33·0	2·1	0·0	0·0	22		0·2	Id.
	3	240	35·3	33·2	2·1	0·0	0·0	22		0·2	Cirro-strati to SW. and SE.
	4	222	35·1	32·8	2·3	0·0	0·0			0·3	Cumulo-strati, cirro-strati, patches of scud.
	5	215	30·3	...	...	0·0	0·0	15		0·5	Woolly cirri to W.; scud on Cheviot.
	6	203	26·4	27·8	...	0·0	0·0		— : 29 : —	8·0	Woolly cirri and cir.-cum.-str.; bluish-black haze to E.
	7	194	25·2	25·1	0·1	0·0	0·0		— : 29 : —	9·0	Id.
	8	190	25·8	25·1	0·7	0·0	0·0			9·0	Id.; stars dim.
	9	182	25·7	25·6	0·1	0·0	0·0			10·0	Dark; a few stars dimly visible.
	10	161	24·1	24·2	...	0·0	0·0		— : 28 : —	9·0	Cirro-cumulo-strati.
	11	141	24·2	23·9	0·3	0·0	0·0	18		10·0	Cirro-cumuli; cirrous clouds and haze.
	12	126	25·7	25·5	0·2	0·0	0·0		— : 24 : —	9·8	Cirro-cumulous-scud, loose cirro-cumuli.
	13	29·098	23·9	...	...	0·0	0·0		— : 22 : —	9·7	Cirro-cumulous-scud, loose cirro-cumuli.
	14	061	24·7	24·3	0·4	0·0	0·0			10·0	Id. id., getting thicker.
	15	020	25·0	24·9	0·1	0·0	0·0			10·0	Densely overcast.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
6 16	28·974	26·4	26·0	0·4	0·0	0·0			10·0	Densely overcast; a few flakes of snow.
17	918	27·4	27·3	0·1	0·0	0·0			10·0	Id.; id.
18	855	32·9	32·3	0·6	0·2	0·2	19		10·0	Id.; slight fall of snow.
19	815	33·9	32·9	1·0	0·5	0·1	16		10·0	Id.; id. sleet.
20	785	34·4	33·8	0·6	0·8	0·0	16	20 : — : —	10·0	Loose scud, nearly homogeneous.
21	785	36·2	34·5	1·7	0·4	0·6	20	— : 22 : —	8·0	Cirro-cumulous-scud; nimbus to N.; very black to S.
22	794	38·0	36·7	1·3	0·9	0·1	20	23 : — : —	8·0	Scud and loose cumuli; nimbus; slight shower.
23	790	38·9	34·9	4·0	2·0	1·6	20	24 : — : —	2·0	Loose cumuli; cirro-cumulous-scud.
7 0	810	37·0	34·8	2·2	2·6	1·5	20	23 : — : —	4·0	Scud; id.
1	805	38·1	35·0	3·1	0·8	0·3	20		1·5	Id.; id.
2	796	37·2	34·3	2·9	0·9	0·7	20	— : — : 23	6·0	Woolly cirri; cumuli on Cheviot; shower to SSE.
3	789	38·2	35·0	3·2	1·4	1·7	20	— : — : 24	5·0	Id.; passing showers of snow.
4	784	33·2	32·7	0·5	1·4	0·8	20		5·5	Heavy shower of snow passed.
5	776	33·0	32·7	0·3	0·8	0·4	20		9·0	
6	772	30·7	30·5	0·2	0·8	0·2	21	24 : — : —	2·0	Loose scud.
7	771	32·3	31·4	0·9	1·5	0·6	20		6·0	Id.
8	767	30·9	30·0	0·9	0·4	0·1	20		3·0	Id.
9	763	30·9	30·0	0·9	0·8	0·5	20		0·5	Id.; faint auroral light to NNW.
10	755	29·7	29·1	0·6	0·6	0·2	20		0·7	Clouds to N.; stars bright.
11	770	30·7	29·8	0·9	0·3	0·2	20		7·0	Thin scud; dense clouds to E.; a few flakes of snow.
12	749	30·1	28·7	1·4	0·5	0·4	20		1·5	Id. id.
13	28·747	29·9	29·3	0·6	0·3	0·1	19		6·0	Woolly cirri; dense clouds to SE.
14	747	30·7	29·2	1·5	0·5	0·2	20		3·0	Patches of woolly cirri; scud to W.
15	742	27·8	27·1	0·7	0·3	0·1	20	— : — : 24	4·0	Woolly cirri.
16	751	30·3	29·0	1·3	0·3	0·5	20		9·0	Loose woolly cirri.
17	740	29·9	29·2	0·7	0·4	0·2	20		2·0	Patches of loose woolly cirri; haze on horizon.
18	732	31·4	30·9	0·5	0·3	0·2	22		3·0	Id.
19	728	31·9	30·7	1·2	0·8	0·5	20		3·0	Woolly cirri to S.; dense clouds to SW. and SE.
20	746	32·7	32·2	0·5	1·0	3·5	21		10·0	Heavy snow storm, ceased snowing at 20h 10m.
21	762	32·6	31·6	1·0	1·0	0·5	21	24 : 26 : 26	3·0	Loose scud; cirro-strati; curled cirri.
22	763	33·1	32·0	1·1	0·8	0·5	19	20 : 24 : 30	5·5	Scud, very low on Cheviot; cir.-cum.-scud; woolly cir.
23	771	36·1	33·1	3·0	1·1	0·9			10·0	Commenced to snow heavily. [Cheviot.
8 0	779	37·1	34·4	2·7	1·4	1·4	20	— : 24 : —	6·5	Cir.-cum.-scud; woolly cirri, stationary; scud low on
1	778	36·4	34·9	1·5	2·0	1·2	20		10·0	Heavy shower of snow.
2	781	38·0	35·1	2·9	2·0	0·8	20		10·0	Passing showers of snow from thin scud; cirri.
3	775	37·0	34·7	2·3	2·3	1·5	20	24 : — : —	8·0	Loose scud; cirrous clouds; loose cumuli to S.
4	779	34·7	33·6	1·1	1·7	1·6	20	23 : 24 : —	4·0	Id.; cir.-cum.-scud; cumuli on Cheviot.
5	777	33·7	33·3	0·4	2·6	1·3	19	23 : — : —	5·5	Id.; woolly cirri; cir.-str.; showers of snow.
6	761	33·3	32·9	0·4	1·3	1·2	19		2·0	Woolly cirri; thick scud to S. and W.
7	768	33·9	32·9	1·0	1·4	1·2	20		3·0	Patches of scud to W.; dense clouds to NE.
8	774	34·5	33·3	1·2	1·8	1·5	20		5·0	Scud on horizon.
9	780	34·9	33·3	1·6	2·1	2·1	20		7·0	Id.
10	770	35·4	34·0	1·4	2·7	2·6	19		10·0	Scud.
11	757	35·0	33·0	2·0	3·1	1·8	20		10·0	Dark; a few stars occasionally visible.
12	765	34·5	32·6	1·9	2·8	1·2	20		8·5	Scud and cirrous clouds.
13	28·742	33·9	32·7	1·2	2·4	1·3	20	22 : — : —	6·5	Scud; cirrous clouds.
14	724	33·3	33·2	0·1	1·8	1·4	20		10·0	Snow.
15	719	33·9	33·5	0·4	2·5	1·4	20		10·0	Snow and sleet.
16	716	34·0	33·8	0·2	1·8	0·9	20		10·0	Id.
17	711	35·0	34·3	0·7	0·4	0·0		24 : — : —	9·0	Scud; cirrous clouds.
18	720	35·3	34·1	1·2	0·0	0·0		24 : — : —	10·0	Id.; id.
19	737	34·9	34·0	0·9	0·1	0·0		24 : — : —	10·0	Id.; id. [of rain.
20	759	34·8	33·9	0·9	0·0	0·0	28	30 : — : —	10·0	Id.; blue cir.-str. to W.; very dark to SE.; drops
21	775	34·7	34·2	0·5	0·0	0·0	30	31 : — : —	10·0	Id.; slight snow since last observation.
22	796	34·4	34·4	...	0·2	0·2			10·0	Snow 15m ago, now sleet.
23	820	36·7	35·7	1·0	0·3	0·4	31	2 : — : —	9·0	Scud; shower of sleet.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
9	0	28·842	36·9	35·7	1·2	0·9	0·5	31	2 : — : —	9·0	Scud.
	1	878	37·2	36·8	0·4	0·9	0·2	1	2 : — : —	9·5	Id.; smart shower since 0h.
	2	915	36·4	35·9	0·5	1·0	0·8	2	3 : — : —	4·0	Patches of thin scud; scud and loose cum.; showers.
	3	956	38·2	36·2	2·0	1·1	0·8	2		2·5	Loose scud and cum.; snow disappearing rapidly.
	4	28·993	38·2	36·3	1·9	0·9	0·4	31	2 : — : —	8·0	Scud; scud and loose cumuli; dense clouds to N.
	5	29·030	37·1	35·7	1·4	0·8	1·1	31	2 : — : —	10·0	Id.; cumuli, cumulo-strati; shower of sleet.
	6	055	36·2	35·2	1·0	1·7	0·5	1	1 : — : —	10·0	Id.; cumulo-strati on E. horizon.
	7	107	35·7	35·1	0·6	2·5	1·6	2	1 : — : —	10·0	Id.; heavy shower of sleet.
	8	147	35·0	34·5	0·5	3·6	2·9	2		10·0	Id.; id.
	9	180	36·1	34·2	1·9	4·2	1·7	2		2·5	Stars rather dim.
	10	206	35·9	33·9	2·0	2·7	2·2	0		1·5	Scud, &c. to N.
	11	238	34·9	33·0	1·9	2·8	2·5	31		1·0	Thin clouds to E. and S.
	12	266	34·1	32·6	1·5	1·8	1·2	31		0·5	Id.
	13	29·292	33·1	31·2	1·9	1·1	0·9	31		0·2	Stars dim near horizon.
	14	300	31·7	29·7	2·0	1·2	0·0			0·2	Scud and cumuli.
	15	308	31·0	29·2	1·8	0·4	0·1	29		0·7	Scud and cirro-strati to SE.; stars very clear.
	16	310	29·6	28·2	1·4	0·4	0·2	28		0·2	Id.; id.
	17	300	31·1	29·6	1·5	0·5	0·6	30	2 : — : —	0·2	Scud to S.
	18	302	31·6	29·1	2·5	1·1	1·7	31		0·2	Scud and cir.-str. on E. and S. hor.; stars very clear.
	19	323	31·2	29·0	2·2	1·9	0·3	30		0·5	Scud to E.; cirro-strati to S.
	20	340	30·6	28·2	2·4	0·9	0·4	29	2 : — : —	1·0	Id.
	21	370	29·0	27·0	2·0	0·9	0·3	28		1·0	Cumulo-strati, cirro-strati; scud.
	22	383	29·3	27·4	1·9	0·3	0·3	28	— : — : 2	1·0	Diffuse cirri; cumulo-strati, cirro-strati.
	23	403	31·4	29·2	2·2	0·1	0·1	28	— : — : 1	2·5	Woolly cirri; id., id.
10	0	414	34·5	32·8	1·7	0·8	1·3	30	— : 1 : —	3·0	Cirro-cumulo-strati; cumuli and cum.-str. to E.
	1	427	35·9	32·7	3·2	1·1	0·3	28	— : 2 : —	7·0	Id.; id. id. N. and E.
	2	439	37·0	34·3	2·7	0·6	1·1	31	1 : — : —	2·5	Loose cumuli; cumuli, cumulo-strati, nimbi.
	3	453	37·9	34·9	3·0	1·6	1·1	31	— : 0 : —	9·5	Cirro-cumulous-scud; snow showers around.
	4	466	36·7	34·2	2·5	0·6	0·3	30	— : 1 : —	8·0	As before; heavy shower of snow at 4h 20m.
	5	477	33·7	32·3	1·4	1·6	0·5	31	1 : — : —	1·0	Patches of loose cumuli and scud.
	6	505	33·6	32·3	1·3	0·8	0·6	30	1 : — : —	10·0	Scud; passing showers of snow; cumuli to E.
	7	516	35·1	32·2	2·9	0·9	1·9	31	0 : — : —	8·0	Id.
	8	533	34·7	31·9	2·8	1·5	0·9	30		8·0	Id.
	9	546	33·7	32·0	1·7	1·6	1·2	31		1·0	Clouds to E.
	10	569	34·0	31·0	3·0	1·6	1·9	0		4·0	Scud.
	11	589	32·9	31·4	1·5	1·5	1·6	31		10·0	Snow falling.
	12	600	31·9	31·3	0·6	2·1	1·2	30		10·0	Heavy snow.
11	0	......	...	...	...	1·9	...				
	13	29·785	22·0	...	...	1·1	0·0			5·0	Thin haze over the sky; faint auroral light?
	14	778	24·0	24·0	...	0·0	0·0			6·0	Haze rather thicker.
	15	763	25·8	25·3	0·5	0·0	0·0			9·0	Haze much thicker; stars scarcely visible.
	16	747	26·8	26·1	0·7	0·0	0·0			10·0	Thick and dark; 16½h snowing.
	17	734	27·8	27·2	0·6	0·0	0·0			10·0	Id.; snowing.
	18	720	29·3	28·9	0·4	0·0	0·0			10·0	Id.; id.
	19	704	29·2	28·8	0·4	0·0	0·0			10·0	Id.; id.
	20	694	29·4	28·9	0·5	0·0	0·0			10·0	Snow ceased.
	21	703	31·0	30·0	1·0	0·0	0·0			10·0	Scud and dense homogeneous clouds.
	22	696	32·7	31·7	1·0	0·0	0·0		12 : — : —	10·0	Loose scud to E.; dense cirro-strati.
	23	687	35·3	32·4	1·9	0·0	0·0	17		10·0	Cirro-strati; patches of scud; clearing to S. and SW.
12	0	702	37·6	35·6	2·0	0·0	0·0	20	22 : — : —	10·0	Thin loose scud; cirrous clouds.
	1	703	36·3	35·9	0·4	0·0	0·0			10·0	Shower of snow since 0h 30m.
	2	696	38·7	36·3	2·4	0·0	0·0	20	28 : — : —	9·5	Scud; fine cirri; occasional flakes of snow.
	3	704	38·2	36·0	2·2	0·0	0·0	19	26 : — : —	10·0	Id.; cirrous clouds to E.
	4	704	38·1	36·0	2·1	0·0	0·0		28 : — : —	10·0	Id.
	5	717	37·0	35·4	1·6	0·0	0·0			10·0	Id.; a few drops of rain.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gott. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
12	6	29·729	35·7	34·7	1·0	0·0	0·0			10·0	Scud; a few drops of rain.
	7	743	35·0	34·3	0·7	0·0	0·0			10·0	Id.
	8	750	34·9	34·2	0·7	0·0	0·0			10·0	Id.; cirrous clouds; a few stars visible.
	9	757	31·5	...	...	0·0	0·0			1·0 ?	Stars rather dim.
	10	766	30·9	31·0	...	0·0	0·0			0·0	Id.
	11	773	31·6	31·7	...	0·0	0·0			0·0	Id.
	12	783	28·6	28·8	...	0·0	0·0			0·2	Id.; haze on horizon.
	13	29·789	30·0	29·9	0·1	0·0	0·0			2·0	Clouds or thick haze to N.
	14	790	30·7	30·7	...	0·0	0·0			3·0	Hazy all round.
	15	797	32·0	31·9	0·1	0·1	0·0	20		10·0	Overcast.
	16	788	31·6	31·8	...	0·0	0·0			0·5 ?	Hazy.
	17	780	29·7	29·4	0·3	0·0	0·0			0·2	Id.
	18	783	29·4	29·4	...	0·0	0·0			0·5	Scud; streaks of cirri.
	19	789	30·9	30·8	0·1	0·0	0·0			3·5	Id. and cirri.
	20	784	34·0	32·8	1·2	0·0	0·0	21	21 : — : —	10·0	Thick scud.
	21	792	35·7	35·2	0·5	0·1	0·0	17		10·0	Id.
	22	789	36·2	35·9	0·3	0·2	0·0	18	20 : — : —	10·0	Scud; dense nearly homogen. cir.-str.; very fine rain.
	23	779	39·1	39·2	...	0·2	0·2	19		10·0	As at 22h; clearing a little to S.
13	0	786	38·3	37·5	0·8	0·4	0·1	20		10·0	Scud and dense cirro-stratus.
	1	785	38·7	38·0	0·7	0·2	0·1	20		10·0	Light rain.
	2	772	38·6	37·9	0·7	0·3	0·3	20		10·0	Scud.
	3	761	38·3	37·2	1·1	1·3	0·7	20	21 : — : —	9·7	Thin smoky scud; cirri to S.
	4	759	38·2	37·0	1·2	1·0	0·2	22	21 : — : —	10·0	Scud.
	5	750	37·8	36·7	1·1	1·0	0·7	20	21 : — : 31	8·0	Id.; woolly cirri in lines from N by W. to S by E.
	6	747	37·6	36·5	1·1	0·4	0·3	22	21 : — : 31	7·5	Id.; id.
	7	751	37·0	36·0	1·0	0·3	0·2	21		8·0	Thin loose scud; cirri.
	8	750	37·5	36·3	1·2	0·3	0·2	21		2·0 ?	Stars very dim.
	9	730	38·1	37·0	1·1	0·5	0·2	20		2·0	Id.
	10	731	37·6	36·6	1·0	0·2	0·2	20		1·0	Loose scud to E.
	11	725	38·0	36·9	1·1	0·3	0·2	20		0·0	Hazy.
	12	745	38·5	37·5	1·0	0·3	0·2	19		10·0	Very dark.
	13	29·725	38·4	37·5	0·9	0·1	0·2	19		10·0	Very dark.
	14	708	38·8	38·0	0·8	0·1	0·1	22		10·0	Id.
	15	689	39·2	38·3	0·9	0·7	0·6	22		10·0	A few stars faintly visible in zenith.
	16	683	39·2	38·4	0·8	0·3	0·1	21		10·0	Dark.
	17	667	39·4	38·8	0·6	0·3	0·1			10·0	Light rain.
	18	667	39·7	39·2	0·5	0·2	0·1	21		10·0	Id.; smart shower since 17h.
	19	659	40·0	39·3	0·7	0·3	0·5	22	22 : — : —	10·0	Loose scud; cirrous clouds.
	20	660	40·5	39·7	0·8	0·6	0·4	23	21 : — : —	10·0	Scud; thick cirro-strati.
	21	654	40·8	40·0	0·8	0·4	0·3	21		10·0	Id.; id.; very fine rain.
	22	654	41·2	40·8	0·4	0·4	0·0			10·0	Nearly homogeneous loose scud.
	23	649	42·7	42·1	0·6	0·0	0·0			10·0	Scotch mist.
14	0	645	42·4	42·0	0·4	0·4	0·2	21		10·0	Id.
	1	632	42·8	42·2	0·6	0·2	0·0			10·0	Id.
	2	622	44·1	43·7	0·4	0·3	0·0	20		10·0	Id.
	3	607	45·1	44·1	1·0	0·7	0·3	21	20 : — : —	10·0	Scud.
	4	595	44·9	44·0	0·9	0·8	0·4	20	20 : — : —	10·0	Id.
	5	591	44·7	43·7	1·0	0·8	0·0		20 : — : —	10·0	Id.; cirrous clouds; snow almost gone.
	6	597	43·6	42·5	1·1	0·6	0·2	20	22 : — : —	10·0	Thin smoky scud; cirrous clouds.
	7	588	43·1	42·2	0·9	0·2	0·0			10·0	Scud; streaks of light to SW.
	8	574	44·0	42·9	1·1	0·2	0·1	18		10·0	Very dark.
	9	557	44·5	43·4	1·1	2·0	0·6	22		10·0	Id.
	10	546	44·3	43·3	1·0	0·5	0·5	19		10·0	Id.
	11	518	45·0	43·3	1·7	0·4	1·1	20		10·0	Clouds broken; scud, and cirrous clouds.
	12	512	44·9	43·4	1·5	0·8	0·2	20		10·0	Dark.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
14	13	29·494	45·0	43·2	1·8	0·6	0·2	20		10·0	Dark.
	14	483	45·3	43·7	1·6	0·5	0·3	20		10·0	Id.; very light rain.
	15	456	45·3	43·9	1·4	1·2	1·0	18		10·0	Id.; id.
	16	450	44·7	44·1	0·6	1·5	0·4	19		10·0	Pitch dark; id.; wind in gusts.
	17	441	45·9	44·9	1·0	1·7	1·2	20		10·0	Id.; light rain.
	18	434	46·1	44·9	1·2	1·5	0·7	20		10·0	Id.
	19	422	45·8	44·6	1·2	0·7	0·3	20		10·0	Id.
	20	424	45·4	44·3	1·1	1·0	0·2	20	22 : — : —	10·0	Scud.
	21	441	45·6	44·2	1·4	0·7	0·1	21	21 : — : —	10·0	Id.
	22	455	45·2	44·3	0·9	0·4	0·3	20	21 : 21 : —	10·0	Id.; cirro-strati.
	23	477	46·8	45·3	1·5	0·9	0·1	21		10·0	Id.; id.
15	0	490	47·0	43·5	3·5	0·2	0·3	22	23 : 24 : —	7·0	Thin scud; cirro-cumulo-strati.
	1	500	47·7	43·7	4·0	1·0	1·2	28	26 : — : 20	4·0	Id.; cirri lying NNE. to SSW.; cir.-cum.-str.
	2	523	48·1	43·1	5·0	1·0	0·9	27	27 : 20 : 20	9·0	Loose scud; cir.-cum.-str.; mottled and linear cirri.
	3	542	47·8	43·2	4·6	0·3	0·5	23	30 : 20 : —	9·7	Scud; cirro-cumulo-strati; loose cumuli to S.
	4	564	46·3	41·2	5·1	0·6	0·6	23	— : 20 : —	10·0	Id.; id.
	5	590	43·9	39·5	4·4	0·2	0·2	22	26 : 20 : —	9·5	Id.; id.; curled cirri.
	6	611	40·7	38·0	2·7	0·6	0·0	20		8·0	Cir.-cum.-str.; shower since 6h; scud on Cheviot.
	7	632	39·2	36·3	2·9	0·0	0·2	27		1·0	Dense clouds to SE.
	8	658	37·8	35·0	2·8	0·2	0·1	25		0·0	Clear.
	9	686	35·9	33·9	2·0	0·1	0·0	22		0·0	Id.
	10	698	36·7	34·1	2·6	0·3	0·2	20		0·0	Id.
	11	706	35·0	33·3	1·7	0·1	0·1	20		0·1	Id.; a patch of scud to N.
	12	718	35·4	33·4	2·0	0·4	0·1	20		0·0	Id.
	13	29·723	35·9	33·7	2·2	0·2	0·2	23		0·0	Clear.
	14	727	35·7	33·7	2·0	0·3	0·2	21		0·0	Stars rather dim.
	15	729	35·2	33·9	1·3	0·6	0·1	20		0·2	Patch of scud to NW.
	16	723	34·4	33·4	1·0	0·4	0·0			0·0	Stars rather dim.
	17	724	34·7	33·6	1·1	0·1	0·1	21		0·2	Masses of scud.
	18	725	37·1	35·6	1·5	0 4	0·1	20		4·0	Light shower from thin scud.
	19	729	37·9	36·1	1·8	0·4	0·0	20		9·7	Scud; light rain; sky to NE.
	20	731	37·3	35·3	2·0	0·4	0·2	20	24 : — : —	3·0	Thin loose scud.
	21	735	37·6	35·8	1·8	0·8	0·3	24	25 : — : —	3·0	Id.; thick scud on Cheviot; cir.-str. to E.
	22	739	41·3	37·9	3·4	1·9	2·1	24	24 : — : —	6·0	Loose scud; light rain.
	23	746	41·9	37·9	4·0	2·3	1·3	25		2·0	Scud on horizon.
16	0	760	43·1	38·8	4·3	4·1	2·8	27	27 : — : —	0·7	Loose cumuli chiefly to E.
	1	761	44·4	38·7	5·7	2·5	2·5	27		1·0	Id.
	2	761	44·7	39·7	5·0	2·6	1·8	25		1·5	Loose cumuli on SSW. horizon; cirrous clouds to S.
	3	771	44·4	39·6	4·8	2·5	3·0	23	26 : — : —	7·0	Thin scud; loose cumuli over the sky.
	4	760	44·7	40·3	4·4	3·5	1·3	20	25 : — : —	7·0	Thin scud and loose cumuli.
	5	745	43·7	39·5	4·2	3·1	2·4	22	26 : — : —	3·5	Id.; patches of scud on horizon.
	6	742	42·9	39·2	3·7	2·4	1·0	23	24 : — : —	3·5	Scud; cirrous-haze on E. horizon.
	7	744	43·8	39·8	4·0	1·8	2·2	24		7·0	Id.
	8	741	43·4	39·6	3·8	1·8	0·9	24		2·0	Id.; dark.
	9	739	43·1	39·7	3·4	2·5	0·7	24		8·0	Id.
	10	736	43·3	39·6	3·7	1·6	2·0	24		4·0	Id.
	11	734	43·4	39·9	3·5	1·8	0·8	23		4·0	Id.
	12	734	42·4	38·9	3·5	1·0	0·7	24		4·0	Id.
	13	29·724	43·6	39·7	3·9	0·9	1·0	23		8·0	Scud.
	14	721	42·7	39·4	3·3	0·8	0·3	20		7·0	Id.; a few drops of rain.
	15	716	42·9	39·3	3·6	0·7	1·2	21		8·0	Id.; id.
	16	708	42·4	38·9	3·5	0·7	0·1	20		8·0	Id.; sky to NE.; slight shower since last observation.
	17	702	40·8	38·0	2·8	0·2	0·2	23		7·0	Sky in zenith.
	18	697	41·3	38·4	2·9	0·2	0·1	24		7·0	Id.
	19	701	41·9	39·0	2·9	0·3	0·0			8·0	Streaks of light to E.
	20	702	41·1	38·2	2·9	0·2	0·0	22	26 : — : —	10·0	Scud; cirro-cumuli; cirro-strati; scud on Cheviot.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
16 21	29·698	41·1	39·0	2·1	0·1	0·0	20	25 : — : —	9·7	Scud; cir.-str. to E.; greenish sky to NE.; light rain.
22	702	41·7	39·4	2·3	0·0	0·0		24 : — : —	9·9	Id.; id. NE.; cirrous clouds and haze.
23	695	43·1	41·0	2·1	0·3	0·1	21		9·9	Id.; id.; id.
17 0	693	45·3	42·6	2·7	0·1	0·1	20		9·7	As before; breaking up.
1	687	45·4	42·1	3·3	0·3	0·2	21		9·8	Id.; id.
2	671	44·4	41·3	3·1	0·5	0·4	21	25 : — : —	10·0	Scud; thick cirro-strati.
3	665	42·1	40·7	1·4	0·4	0·0		25 : — : —	10·0	Id.; id.; rain since 2h.
4	657	40·8	40·3	0·5	0·0	0·0			10·0	Heavy shower.
5	646	40·5	40·2	0·3	0·0	0·0			10·0	Scud; cirrous clouds.
6	639	39·0	38·9	0·1	0·0	0·0		25 : — : —	10·0	Id., moving very slowly; cirrous clouds.
7	637	38·9	38·4	0·5	0·0	0·0			10·0	Id. id.; id.
8	628	39·6	39·0	0·6	0·0	0·0			10·0	Dark.
9	623	39·5	38·9	0·6	0·0	0·0			10·0	Id.; light rain.
10	606	38·9	38·4	0·5	0·0	0·0			10·0	Id.; id.
11	595	39·3	39·0	0·3	0·0	0·0			10·0	Id.; id.
12	584	39·1	38·9	0·2	0·0	0·0			10·0	Dark; light rain.
23½	29·378	...	...	...	0·0	0·0			...	Drizzling rain throughout the day.
18 13	28·976	40·1	39·5	0·6	1·9	0·5	21		10·0	Dark; light rain.
14	957	42·3	40·8	1·5	0·4	1·3	20		7·0	Stars indistinct.
15	932	41·4	39·9	1·5	0·8	0·7	20		9·5	Id.
16	924	41·4	39·5	1·9	0·9	0·7	20		10·0	Very dark.
17	905	41·3	39·0	2·3	1·1	0·6	20		10·0	Id.
18	898	41·1	39·0	2·1	0·4	0·2	20		10·0	Id.
19	887	40·7	38·8	1·9	0·4	0·1	28		10·0	Light rain. [19h.
20	926	36·2	35·4	0·8	0·2	0·0			10·0	Patches of scud to S.; light rain; heavy shower since
21	954	36·3	35·6	0·7	0·1	0·0	30	0 : — : —	10·0	Scud; light rain.
22	28·977	36·0	35·4	0·6	0·3	0·2	0	0 : — : —	10·0	Id.; id.
23	29·006	36·8	35·7	1·1	0·6	0·6	0	0 : — : —	10·0	Id.; id.
19 0	040	36·0	34·9	1·1	3·3	1·3	0	0 : — : —	10·0	Id.; showers of snow and sleet.
1	072	36·2	33·9	2·3	2·9	2·3	0	0 : — : —	10·0	Id.; id.
2	110	35·3	33·2	2·1	2·8	2·2	0		10·0	Id.; shower of snow.
3	133	36·1	32·9	3·2	1·8	2·0	31	0 : — : —	10·0	Id.; dense mass of cirro-strati.
4	158	36·7	33·0	3·7	3·0	1·1	31	0 : 22 : 22	9·9	Id.; woolly cirri and cirro-strati. [of snow.
5	186	34·8	32·4	2·4	1·5	0·9	29	— : 28 : 22	6·0	Woolly and linear cirri; cum.-str. and nimbi; shower
6	205	34·3	32·3	2·0	0·8	0·8	30	30 : — : —	5·0	Scud; cirri to E.
7	241	33·1	31·0	2·1	2·8	0·9	30		10·0	Shower of snow.
8	276	32·2	30·1	2·1	2·0	1·7	30		10·0	Id.
9	313	30·9	29·9	1·0	2·6	1·1	31		10·0	Snowing heavily.
10	325	31·2	28·8	2·4	1·9	0·4	29		4·0	Stars dim.
11	353	29·7	27·2	2·5	0·5	0·5	28		1·0	Thin clouds, chiefly to N.
12	365	29·3	26·8	2·5	1·5	1·2	28		0·5	Id.; stars bright.
13	29·383	28·8	26·0	2·8	1·6	0·5	28		0·2	Cirri to SE.; id.
14	385	27·3	24·9	2·4	1·0	0·6	27		0·0	Clear.
15	393	27·2	24·9	2·3	1·3	0·4	27		0·0	Id.
16	409	29·7	27·0	2·7	1·6	1·9	28		5·0	Hazy; stars dim; small flakes of snow.
17	438	30·5	28·6	1·9	3·1	0·7	30		3·0	Cirrous clouds and scud; id.
18	470	29·7	27·9	1·8	0·9	0·2	29		0·7	Id. to S. [to E.
19	475	28·6	26·9	1·7	0·4	0·6	29		0·2	Castellated cum.-str. on E. hor.; cir.-str.; cir.-haze
20	499	28·7	26·3	2·4	1·1	0·9	29		0·5	Cir.-str. and cum.-str. on E. hor.; scud on Cheviot.
21	525	28·1	26·0	2·1	0·5	0·4	28		0·5	Id.
22	531	29·4	27·0	2·4	0·3	0·4	29		0·2	Cirro-strati, cumulo-strati, and cirrous-haze on E. hor.
23	544	30·9	28·2	2·7	0·6	0·3	30		0·1	Loose cumuli and cirrous-haze on E. horizon.
20 0	557	31·9	29·0	2·9	0·4	0·3	28		0·5	Cir.-str., cir.-haze, and cum.-str. on hor., except to W.
1	557	32·8	30·0	2·8	0·4	0·4	28		0·5	Id., id.
2	553	34·2	31·0	3·2	0·4	0·8	28		0·5	Cum. to N.; pat. of scud and cir.-haze to SE. and S.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Feb. 19d 12h. The vane of the anemometer was found to be frozen up, the opening being towards the north; it being found difficult to remove the ice, the vane was set with its opening to the wind (NW). The ice was removed at 22h.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
20	3	29·531	34·5	30·7	3·8	0·6	0·4	28		1·0	Fine cumuli all round the horizon.
	4	526	34·4	30·6	3·8	0·4	0·1	25	26 : — : —	2·0	Cumuli and cum.-str.; nimbi to E.; fine blue sky.
	5	517	33·7	29·7	4·0	0·3	0·0		26 : — : —	2·0	Cum.-str. on hor.; patches of cum.; cir.-cum. to W.
	6	511	32·1	29·1	3·0	0·0	0·0	24	26 : — : —	9·0	Scud or loose cum.; snowing to SW.; cum. and cum.-str.
	7	509	28·1	27·0	1·1	0·0	0·0			1·0	Scud; cumuli, &c., to E.
	8	489	28·0	27·0	1·0	0·0	0·0			0·0	Clear; stars bright.
	9	484	27·0	25·5	1·5	0·0	0·0			0·0	Id.; id.
	10	452	27·3	25·0	2·3	0·0	0·0			0·0	Id.; id.
	11	438	27·5	25·0	2·5	0·2	0·5	22		0·0	Id.; id.
	12	413	27·9	25·4	2·5	0·3	0·2	21		0·0	Id.; id.
	13	29·383	26·9	24·8	2·1	0·1	0·0			0·0	Clear; stars bright.
	14	362	26·0	24·5	1·5	0·2	0·1			0·5	Clouds on N. and E. horizon.
	15	318	27·0	25·2	1·8	0·2	0·2	20		5·0	Clear in zenith; clouds all round.
	16	309	28·8	26·7	2·1	0·2	0·1	20		5·0	Hazy in zenith; id.
	17	283	29·8	28·0	1·8	0·0	0·0			10·0	Light fall of snow.
	18	290	28·3	27·6	0·7	0·2	0·0			10·0	Snowing heavily; 0·5 inch. of snow fallen since 17h.
	19	285	26·6	25·8	0·8	0·0	0·0			10·0	Light fall of snow.
	20	274	25·0	24·7	0·3	0·0	0·0		28 : — : —	9·0	Scud; strati to SE.; cirri to NE.
	21	274	21·7	22·1	0·6	0·0	0·0		— : 26 : —	5·0	Cir.-cum.-str. and woolly cirri; scud to S. [scud.
	22	257	25·4	25·0	0·4	0·0	0·0		— : 26 : —	5·0	Cir.-cum.-str. radiating from WNW.; strati, cumuli,
	23	254	28·9	27·9	1·0	0·0	0·0			8·5	As before, but much thicker; cum. to E.; sky to NE.
21	0	252	29·9	27·8	2·1	0·0	0·0			8·5	The same.
	1	234	28·8	25·8	3·0	0·0	0·0	30	— : — : 27	2·0	Woolly cirri and cirrous-haze; scud to E.
	2	232	31·0	27·7	3·3	0·1	0·0	1	— : 4 : —	7·0	Cirro-cumulo-strati; diffuse and linear cirri to NW.
	3	202	32·5	28·7	3·8	0·2	0·3	3	4 : — : 26	8·0	Loose cumuli; diffuse cirri; solar halo.
	4	193	31·1	28·0	3·1	0·4	0·1	2	4 : — : 26	4·0	Id.; id.; halo gone.
	5	185	30·3	27·0	3·3	0·3	0·2	2		2·5	Id.; id.; id.
	6	188	28·2	25·5	2·7	0·1	0·0	1	5 : — : —	5·0	Id.; cirro-strati; cirro-cumuli.
	7	189	27·1	24·1	3·0	0·0	0·0	2		0·7	Cirro-strati on horizon; very clear.
	8	191	24·5	22·4	2·1	0·0	0·0			1·0	Clouds to E. and NE.
	9	184	23·7	22·0	1·7	0·0	0·0			0·0	Hazy on horizon.
	10	180	19·5	19·0	0·5	0·0	0·0			0·0	Clear.
	11	183	16·9	16·9	...	0·0	0·0			0·2	Clouds to NE.; very clear.
	12	186	18·8	18·9	...	0·0	0·0			0·1	Clouds and haze on horizon.
	13	29·209	18·7	18·7	...	0·0	0·0			4·0	Scud, slight shower of snow at 13h 30m.
	14	205	22·2	22·2	...	0·0	0·0	8		0·2	Clouds on NE. horizon.
	15	215	18·8	19·0	...	0·0	0·0			0·2	Id.
	16	213	15·7	16·0	...	0·0	0·0			0·0	Clear.
	17	228	12·3	12·6	...	0·0	0·0			0·2	Scud to E.
	18	246	14·6	14·8	...	0·0	0·0			0·2	Id. to N.
	19	260	12·9	12·4	0·5	0·0	0·0			0·5	Cumuli on E. and NE. horizon.
	20	278	12·0	12·5	...	0·0	0·0			1·0	Scud to E. and NE.; range of cumuli to N. and E.
	21	310	15·7	16·0	...	0·0	0·0			1·0	Nimbi and cumulo-strati to NE.; cumuli to E.
	22	334	20·9	21·2	...	0·0	0·0		5 : — : —	6·5	Thin scud; cumuli, cirro-cumulo-strati; slight snow.
	23	361	24·7	24·3	0·4	0·0	0·0			1·0	Cirrous-haze and cumulo-strati to E.; cirri.
22	0	374	29·7	27·7	2·0	0·0	0·0			0·5	Cumuli and cumulo-strati on E. horizon.
	1	385	31·0	28·3	2·7	0·0	0·0			0·5	Id.; haze.
	2	393	32·2	28·8	3·4	0·0	0·0			0·5	Cauliflower cumuli and nimbi to E. and S.
	3	400	32·2	29·0	3·2	0·0	0·0	23		0·5	Cum., cum.-str., and haze to E.; cirro-strati to NE.
	4	396	32·4	28·9	3·5	0·0	0·0	23	— : — : 0	5·0	Thin woolly cirri; cumuli, cumulo-strati, and haze.
	5	396	32·8	28·9	3·9	0·2	0·0	23	— : — : 30	8·0	Woolly cirri; cumuli to SE.
	6	397	30·5	27·1	3·4	0·2	0·2	20	28 : — : —	9·7	Cirro-cumulous-scud; cirro-cumulo-strati and cirri.
	7	397	30·0	27·2	2·8	0·2	0·2	20		9·2	Id.; cirrous clouds.
	8	384	29·6	27·0	2·6	0·4	0·7	22		5·0	Cirrous clouds and haze.
	9	392	28·6	27·6	1·0	0·5	0·0			1·5	Thin cirri radiating from WNW.
	10	397	26·9	26·0	0·9	0·0	0·0			0·5	Thin cirri.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
22 11	29·394	27·9	26·7	1·2	0·0	0·0			0·5	Thin cirri to S.
12	404	27·0	26·0	1·0	0·0	0·0			0·0	Clear.
13	29·413	28·0	26·0	2·0	0·2	0·2	24		0·0	Clear; shooting star to S.
14	420	27·2	24·9	2·3	0·2	0·2	24		0·7	Cirri to SW.
15	415	23·9	22·7	1·2	0·1	0·0			0·7	Id.
16	412	26·0	24·4	1·6	0·2	0·1	21		0·5	Id.
17	415	26·9	25·0	1·9	0·0	0·0			0·2?	Id.
18	415	26·2	24·8	1·4	0·0	0·0			0·0?	[and cum.-str. to E.
19	413	25·5	24·0	1·5	0·0	0·0			2·5	Linear cirri lying NW by N. to SE by S.; cir.-str.
20	419	21·7	21·1	0·6	0·0	0·0			0·2	Cirri and cirro-strati; cumulo-strati on E. horizon.
21	413	21·9	21·5	0·4	0·0	0·0			1·0	Cumuli, cirro-strati, cumulo-strati, linear cirri.
22	412	26·5	25·0	1·5	0·0	0·0		— : — : 27	2·0	Woolly and linear cirri radiating from NW by N.
23	387	30·0	28·2	1·8	0·0	0·0			7·0	Woolly cirri and cirrous-haze; cum.-str.; solar halo.
23 0	363	34·1	31·2	2·9	0·0	0·0	16		9·5	General cirrous-haze; cumulo-strati; halo.
1	329	35·1	31·7	3·4	0·0	0·0	14	20 : — : —	9·7	Scud; dense cir.-str.; cum.-str. on E. hor.; halo gone.
2	286	34·8	31·4	3·4	0·0	0·0	14	18 : — : —	10·0	Scud; dense cirro-strati; cumuli on E. horizon.
3	208	34·9	32·5	2·4	0·3	0·1	14		10·0	Dense cirro-strati; a few flakes of snow at $2\frac{1}{2}^{h}$.
4	143	33·4	30·8	2·6	0·4	0·4	14	14 : — : —	10·0	Patches of scud; very dense cirro-strati.
5	080	31·8	32·0	…	1·0	0·8	13		10·0	As before; snowing.
6	29·018	30·9	30·0	0·9	0·5	0·3	12		10·0	Snowing.
7	28·935	31·1	30·6	0·5	2·3	0·9	10		10·0	Id.
8	879	32·1	31·6	0·5	0·7	0·3	12		10·0	Id., large flakes.
9	804	32·4	31·9	0·5	0·5	0·0	10		10·0	Id., id.
10	754	32·5	32·5	…	0·5	0·0			10·0	Id.
11	710	32·8	32·2	0·6	0·0	0·0			10·0	Id.
12	682	32·8	32·2	0·6	0·0	0·0			10·0	
13	28·673	32·8	32·3	0·5	0·0	0·0			10·0	Light fall of snow.
14	666	32·2	32·3	…	0·0	0·0			10·0	Cirrous clouds and haze; stars occasionally.
15	663	33·1	32·4	0·7	1·0	0·9	7		10·0	Sleet.
16	665	32·6	32·6	…	3·0	2·8	7		10·0	Id.
17	719	32·7	32·6	0·1	2·5	1·6	7		10·0	Id.; three inches of snow on the ground.
18	775	32·5	32·5	…	1·5	1·5	7		10·0	Snowing.
19	820	31·8	31·4	0·4	1·4	0·7	6	6 : — : —	10·0	Id.; scud.
20	878	31·0	30·7	0·3	1·1	0·7	6		10·0	Id.; dense clouds to E.
21	920	32·3	30·7	1·6	1·4	0·6	6	6 : — : —	9·5	Scud; light rain.
22	28·965	32·7	31·1	1·6	0·9	0·6	8	8 : — : —	9·0	Id.; cirro-cumulo-strati.
23	29·016	33·0	31·6	1·4	0·9	0·2	8		10·0	Homogeneous; a few flakes of snow.
24 0	058	33·3	31·8	1·5	0·5	0·2	8		10·0	As before; slight fall of snow.
1	094	33·6	32·1	1·5	0·2	0·2	8		10·0	Id.; id.
2	124	35·0	32·7	2·3	0·2	0·4	9		10·0	Id.; id.
3	144	33·3	31·7	1·6	0·2	0·1	9		10·0	
4	164	32·2	31·2	1·0	0·2	0·1	9		10·0	
5	194	31·8	30·2	1·6	0·0	0·0	10		10·0	
6	234	30·6	29·8	0·8	0·1	0·0			10·0	Slight fall of snow.
7	255	29·5	29·4	0·1	0·0	0·0			10·0	Id.
8	284	29·4	29·3	0·1	0·0	0·0			10·0	Id.
9	315	29·4	29·1	0·3	0·0	0·0	10		10·0	A few flakes of snow; Moon's disc visible.
10	329	29·6	29·0	0·6	0·0	0·0			10·0	Slight snow.
11	353	29·6	28·9	0·7	0·0	0·0			10·0	Id.
12	369	29·1	28·7	0·4	0·0	0·0			9·9	Clouds breaking.
25 0	28·990	…	…	…	1·4	…	14		…	Snowing heavily.
2	849	…	…	…	…	…				
4	773	…	…	…	…	…				
$5\frac{1}{2}$	762	…	…	…	…	…				
13	28·637	26·3	26·1	0·2	0·8	0·0			10·0	

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Feb. 22d 17h. A belt of lighter sky extends from NNW. to SE. with strips of darker sky at its upper edge.

Feb. 23d 5h. The water in the cistern of the anemometer having become frozen, it was melted by pouring in hot water.

Gött. Mean Time.		Baro-meter at 32°.	Thermometers.			Wind.			Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
25	14	28·612	26·5	26·3	0·2	0·0	0·0			10·0	
	15	603	27·9	27·5	0·4	0·0	0·0			10·0	A few flakes of snow.
	16	583	28·5	28·3	0·2	0·0	0·0			10·0	Id.
	17	571	29·4	29·1	0·3	0·0	0·0			10·0	Heavy fall of snow.
	18	559	34·0	34·0	...	0·9	0·5	4		10·0	Sleet.
	19	561	34·6	33·4	1·2	2·7	1·7	2		10·0	A few drops of sleet.
	20	575	33·8	33·0	0·8	3·0	2·2	3		10·0	Shower of snow.
	21	603	33·2	32·7	0·5	3·0	2·2	2		10·0	Light shower of snow.
	22	627	33·0	32·7	0·3	3·9	1·5	3		10·0	Snowing rather heavily.
	23	662	33·5	32·4	1·1	2·9	2·1	4		10·0	Slight snow.
26	0	686	34·4	31·8	2·6	3·4	1·9	4		10·0	A few flakes of snow; breaking to NE.
	1	716	33·2	31·7	1·5	3·4	2·7	4		9·9	Passing shower of snow; scud, cirro-strati.
	2	746	34·3	30·7	3·6	4·0	3·3	3	4 : — : —	9·8	Scud.
	3	777	32·6	29·0	3·6	4·1	2·7	3	3 : — : —	9·0	Id.; snow showers; cirro-cumulo-strati; cirro-strati.
	4	826	28·6	28·0	0·6	5·2	3·6	3	3 : 2 : —	9·5	Id.; cirro-stratous-scud; very heavy snow and drift.
	5	866	29·3	27·0	2·3	4·6	2·4	4	3 : — : 26	8·5	Scud and cumuli; cirri; showers of snow.
	6	914	27·3	26·0	1·3	4·0	1·5	2		8·5	Cumuli; woolly cirri; snowing and drifting.
	7	949	27·0	25·0	2·0	1·8	1·0	2	4 : — : —	8·0	Scud; cumuli and woolly cirri.
	8	28·991	27·4	25·0	2·4	2·2	2·7	2	2 : — : —	7·0	Id.; passing showers of snow.
	9	29·026	26·7	24·8	1·9	2·3	2·3	2		7·0	Id.
	10	059	25·5	24·4	1·1	2·1	1·5	0		10·0	
	11	085	24·7	23·5	1·2	1·0	0·0		1 : — : —	3·0	Scud.
	12	105	26·9	26·3	0·6	1·1	0·5	0	1 : — : —	10·0	Id.; flakes of snow falling.
	13	29·137	23·9	23·0	0·9	0·1	0·0		1 : — : —	7·0	Scud.
	14	144	19·5	18·9	0·6	0·2	0·1	28		0·5	Id. on E. horizon.
	15	157	18·1	17·6	0·5	0·1	0·0	27		0·0	Clear.
	16	157	17·5	17·2	0·3	0·0	0·0			0·0	Id.
	17	160	18·5	17·8	0·7	0·0	0·0			0·2	Cirri to N.; no appearance of twilight.
	18	165	14·0	13·9	0·1	0·0	0·0			0·5	Scud to N. and E.
	19	146	18·2	17·8	0·4	0·0	0·0	22	1 : — : —	7·0	Scud; woolly cirri; cumuli on horizon.
	20	142	23·2	21·3	1·9	0·0	0·0	22		9·0	Id., cumuli, cir-cum-str., cirro-strati; clouds red.
	21	145	27·2	25·2	2·0	0·0	0·0	21		10·0	Thick cirrous mass; beginning to snow.
	22	099	32·0	28·0	4·0	0·0	0·0			10·0	Id.
	23	080	35·0	32·3	2·7	0·0	0·0	22	26 : — : 28	9·9	Loose scud; woolly cirri, cirrous-haze; cirro-strati.
27	0	059	36·9	34·9	2·0	0·2	0·2	28	— : 31 : —	9·0	Woolly cirri and cirro-cumuli; scud.
	1	053	37·3	34·2	3·1	0·4	0·4	28		9·0	Id.
	2	046	39·2	35·7	3·5	0·3	0·3	26	— : — : 28	8·0	Woolly cirri; cum. and cum.-str. to E. and S.; cirri.
	3	051	38·3	35·2	3·1	1·2	1·3	27		9·0	Id.; id.
	4	051	38·4	35·1	3·3	2·3	0·9	25	— : — : 28	8·0	Id.; cum.-str., and cir.-str.; cirri; scud.
	5	060	37·3	34·4	2·9	1·2	1·2	27	— : — : 31	8·0	Woolly cirri; linear cirri; scud, cum.-str., cir.-str.
	6	079	36·2	33·5	2·7	1·4	1·1	28	27 : — : —	10·0	Scud; diffuse cirri over the sky.
	7	088	35·8	33·0	2·8	1·2	0·8	28		9·0	As before; wind blowing in gusts.
	8	108	35·5	33·3	2·2	1·0	0·6	28		7·0	Id.; stars dim; lunar corona.
	9	103	34·8	32·9	1·9	0·6	0·1	28	28 : — : —	4·0	Scud; lunar corona.
	10	130	35·7	33·7	2·0	0·4	0·2	28		10·0	Cirrous clouds; flakes of snow.
	11	127	34·0	32·3	1·7	0·2	0·2	26		7·0	Cirro-strati and linear cirri over most of the sky.
	12	130	34·2	32·4	1·8	0·8	0·3	26		3·0	Id.
	13	29·144	34·9	32·7	2·2	0·7	0·2	27		8·0	The same, radiating from NNW.; lunar corona and [halo.
	14	147	35·6	32·8	2·8	1·2	0·3	27		8·0	Woolly and linear cirri.
	15	165	33·2	32·2	1·0	0·2	0·0			0·5	Detatched patches of cirro-strati.
	16	172	32·5	31·4	1·1	0·2	0·0			0·1	Cirri on NW. horizon.
	17	174	31·6	30·5	1·1	0·0	0·0			0·0	Stars not very distinct.
	18	186	32·0	30·1	1·9	0·0	0·0			0·1	Id.; cirro-strati on E. horizon.
	19	188	32·7	30·7	2·0	0·0	0·1	22	26 : — : —	7·0	Scud; cumuli, cirri, strati on Cheviot; hazy.
	20	206	33·4	31·6	1·8	0·1	0·1	21		9·0	As before.
	21	208	35·5	33·0	2·5	0·0	0·0	22	28 : — : —	9·0	Scud, cum.; strati on Cheviot; cirri and cir.-haze.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Feb. 26d 4h. The vane of the anemometer was found to be frozen up; the ice removed.

Feb. 27d 2h. The water in the cistern of the anemometer having become frozen, it was melted by pouring in hot water.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
27	22	29·206	37·8	35·7	2·1	0·1	0·1	21		10·0	Scud, cum.; strati on Cheviot; cirri and cir.-haze.
	23	194	38·8	36·9	1·9	0·3	0·1	22		10·0	The same.
28	0	204	38·9	36·9	2·0	0·2	0·2	20		9·9	Homogeneous clouds.
	1	192	37·7	36·6	1·1	0·2	0·1	19		10·0	Snow.
	2	156	40·0	37·6	2·4	0·0	0·2	20	21 : — : —	9·8	Scud; cirrous clouds.
	3	129	41·9	39·2	2·7	0·0	0·0	20		10·0	Id.; id.
	4	113	37·7	36·0	1·7	0·3	0·1	18	20 : — : —	10·0	Loose scud; cirrous clouds.
	5	101	37·7	36·2	1·5	0·4	0·2	18	21 : — : —	9·9	Id.; id.
	6	096	37·0	35·6	1·4	0·2	0·0	17	23 : — : —	9·7	Scud.
	7	097	36·0	34·8	1·2	0·3	0·0	18	24 : — : —	3·0	Id.
	8	104	36·2	35·1	1·1	0·1	0·0		23 : — : —	10·0	Id.
	9	111	35·4	34·6	0·8	0·0	0·0			10·0	Id.
	10	115	35·6	34·7	0·9	0·0	0·0	18		10·0	Id.
	11	121	35·1	34·3	0·8	0·0	0·0		25 : — : —	9·5	Id.; faint lunar halo.
	12	130	35·3	34·8	0·5	0·0	0·0		25 : — : —	10·0	Thick scud.
	13	29·152	35·0	34·3	0·7	0·0	0·0			10·0	Thick scud.
	14	164	35·1	34·4	0·7	0·0	0·0			10·0	Id.
	15	185	36·0	34·4	1·6	0·0	0·0			10·0	Dark.
	16	203	36·0	34·3	1·7	0·0	0·0			10·0	Id.
	17	215	35·4	34·0	1·4	0·0	0·0			10·0	Id.
	18	227	35·2	33·7	1·5	0·0	0·0			10·0	Id.
	19	252	34·7	33·1	1·6	0·0	0·0	20		10·0	Nearly uniform mass of scud.
	20	271	35·0	33·2	1·8	0·0	0·0			10·0	Id.
	21	283	35·7	34·0	1·7	0·0	0·0			10·0	Id.; cirro-strati.
	22	293	38·1	36·1	2·0	0·0	0·0		28 : — : —	10·0	Id.
	23	285	40·9	37·9	3·0	0·0	0·0		30 : — : —	9·9	Id.
29	0	287	41·6	37·9	3·7	0·0	0·0			9·9	Scud, moving very slowly; probably two currents.
	1	287	41·9	38·8	3·1	0·0	0·0		20 : — : —	9·8	Id., id.
	2	283	41·0	37·6	3·4	0·0	0·0			10·0	Id., nearly homogeneous; hazy.
	3	256	41·2	38·2	3·0	0·0	0·0			10·0	Id., id.
	4	229	39·1	36·6	2·5	0·0	0·0		20 : — : —	10·0	Id.; cirrous clouds; solar halo at $4^h\ 20^m$.
	5	196	37·2	35·0	2·2	0·0	0·0		18 : — : —	10·0	Id.: cirrous-haze.
	6	166	35·2	33·7	1·5	0·0	0·0			10·0	Id.
	7	130	35·5	34·0	1·5	0·1	0·0	15		10·0	Id.
	8	107	35·4	34·2	1·2	0·0	0·0			10·0	Moon's disc faintly visible.
	9	29·044	36·0	34·7	1·3	0·0	0·0			10·0	Id.
	10	28·981	36·9	35·3	1·6	0·1	0·3	13		10·0	Scud.
	11	908	37·0	35·8	1·2	0·8	0·3	14		10·0	Light rain.
	12	838	37·0	35·8	1·2	0·9	0·3	13		10·0	Id.
	13	28·769	37·2	36·2	1·0	0·8	0·6	15		10·0	Smart rain.
	14	719	38·2	36·7	1·5	2·2	1·0	16		10·0	Scud.
	15	716	38·0	36·9	1·1	1·5	0·0	22		10·0	Id. more broken than before.
	16	722	37·7	37·0	0·7	0·0	0·0	20	24 : — : —	9·0	Id.
	17	741	39·4	37·7	1·7	0·3	0·2	19	24 : — : —	1·0	Id.
	18	757	37·7	36·4	1·3	0·3	0·3	19	24 : — : —	2·0	Id.
	19	782	38·2	36·8	1·4	0·3	0·1	18	24 : — : —	9·0	Id.
	20	803	38·2	36·9	1·3	0·4	0·2	18	24 : — : —	9·5	Thick scud.
	21	826	39·6	37·2	2·4	0·9	0·5	20	21 : — : —	7·0	Loose watery scud; patches of woolly cirri.
	22	850	39·4	37·2	2·2	0·4	0·1	21	23 : — : —	3·0	Id.; id.; haze on hor.
	23	859	40·0	37·3	2·7	1·5	1·4	20		1·0	Loose patches of scud; haze on E. horizon.
1	0	879	40·3	37·0	3·3	1·6	1·2	20		0·5	Scud; linear cirri.
	1	889	41·0	37·8	3·2	2·8	1·7	19		1·0	Patches of scud; cirro-cumulo-strati, cirro-strati, cirri.
	2	909	41·7	38·0	3·7	2·0	1·7	20	— : 23 : —	8·0	Cirro-cumulo-strati; cirri; cumuli.
	3	895	42·9	39·2	3·7	2·7	2·7	20	23 : — : —	5·0	Thin scud; loose cumuli to S.
	4	908	42·3	38·8	3·5	2·9	0·8	19	— : — : 24	0·7	Thin woolly cirri; ranges of cumuli on S. horizon.
	5	916	40·7	37·9	2·8	3·8	1·7	20	21 : — : —	7·5	Scud; varieties of cirri over most of the sky.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time. d.	h.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
1	6	28·909	40·3	38·0	2·3	1·8	0·5	20	21 : — : —	9·7	Scud; cirri and cirrous-haze.
	7	894	39·3	37·6	1·7	0·6	0·1	19	20 : — : —	10·0	Id.; cirrous-haze, &c.
	8	874	36·8	36·0	0·8	1·1	0·3	19		10·0	Rain.
	9	834	34·1	33·9	0·2	0·2	0·0			10·0	Id.
	10	797	34·9	34·6	0·3	0·2	0·1	18		10·0	Id.
	11	810	35·6	35·0	0·6	0·4	0·2	20	23 : — : —	6·0	Loose scud, causing coloured lunar corona; sky milky.
	12	821	34·7	34·1	0·6	0·5	0·2	20		7·0	Cirro-cumulous-scud.
	13	28·830	34·7	34·0	0·7	0·6	0·5	20		4·0	Loose scud to E.
	14	845	34·6	33·7	0·9	1·5	0·6	20		0·5	Cirrous clouds.
	15	808	34·9	33·8	1·1	2·0	1·2	19		0·1	Cirro-strati on E. horizon.
	16	815	34·8	33·4	1·4	1·9	0·7	20		0·2	Woolly cirri and cirro-strati to W.
	17	835	34·7	32·7	2·0	0·8	0·5	22		0·2	Cirro-strati to W.; masses of scud.
	18	828	35·0	33·2	1·8	0·6	0·4	20		0·2	Id.; id.
	19	828	34·7	33·0	1·7	0·8	1·0	20	21 : — : —	1·0	Scud.
	20	826	35·3	33·6	1·7	1·8	0·9	19	21 : — : —	1·5	Id.; loose cumuli near Cheviot; patches of cirri.
	21	835	36·7	34·4	2·3	2·0	1·7	19		1·5	Id.
	22	839	38·2	35·3	2·9	4·0	1·7	20		5·0	Id.
	23	842	38·5	36·3	2·2	2·3	2·1	19		5·0	Id.
2	0	846	40·2	37·5	2·7	3·0	1·7	20	21 : — : —	1·5	Id.; woolly cirri and cirrous-haze on horizon.
	1	858	40·7	38·6	2·1	2·2	0·7	20	21 : — : —	5·0	Id.; linear and mottled cirri.
	2	849	42·2	38·7	3·5	1·3	2·2	20		5·0	
	3	835	43·3	39·3	4·0	2·1	1·2	20	— : — : 24	8·0	Woolly cirri, moving slowly; patches of scud.
	4	827	39·5	37·8	1·7	1·8	0·4	20		7·0	A shower of rain since last observation.
	5	805	40·3	37·3	3·0	1·5	1·3	20		5·0	Scud, cumuli; woolly cirri, stationary.
	6	805	36·8	35·7	1·1	1·4	1·5	20		1·2	Loose scud, cumuli, woolly cir.-str.; shower lately.
	7	808	35·0	33·6	1·4	0·8	1·0	20	21 : — : —	0·5	Id., id. to S. and E.; passing showers.
	8	799	34·7	33·4	1·3	0·5	0·2	20		0·5	Id.
	9	781	35·6	33·9	1·7	1·3	0·7	20		1·0	Id.; thin woolly cirri.
	10	777	36·6	34·4	2·2	1·1	1·1	20		6·0	Scud, producing a coloured lunar corona.
	11	765	35·5	33·9	1·6	1·0	0·5	20		3·5	Patches of loose scud and cirri.
	12	752	36·9	34·5	2·4	1·1	1·0	20		6·0	Scud.
3	0	28·648	...	...	...	3·5	3·0	20			
	13	29·041	37·6	35·3	2·3	4·8	0·0	28	— : 30 : —	6·5	Cirro-cumulous-scud, moving quickly.
	14	071	35·0	33·3	1·7	0·0	0·0	28	— : 30 : —	1·0	Id.
	15	092	34·0	32·4	1·6	0·0	0·0	28		1·5	Id.
	16	108	34·7	32·8	1·9	0·0	0·0	28		0·5	Id.
	17	123	32·1	31·2	0·9	0·0	0·0			2·0	Id.
	18	134	34·3	32·5	1·8	0·0	0·0			8·5	Id.
	19	140	33·9	32·0	1·9	0·1	0·0			3·0	Scud, cumuli, cumulo-strati, cirro-cumuli, cirri.
	20	179	33·9	32·3	1·6	0·0	0·0			5·0	Cum.-str., cir.-str.; varieties of cirri lying E. to W.
	21	195	36·8	34·9	1·9	0·1	0·3	30	2 : — : 22	7·0	Cumuli; cirri and thin cir.-str. lying from WSW. to ENE.
	22	210	38·3	36·4	1·9	0·4	0·5			9·0	As before; thick scud to N. and S.
	23	236	39·7	38·0	1·7	0·7	0·6	31	2 : — : —	10·0	Scud; shower of rain.
4	0	253	37·5	36·3	1·2	1·8	1·8	0	2 : — : —	10·0	Id.; light rain.
	1	280	36·5	35·2	1·3	2·9	2·5	31	2 : — : —	10·0	Id.; a few flakes of snow.
	2	281	37·5	34·0	3·5	3·1	3·0	0	2 : — : —	10·0	Id.; woolly cirri.
	3	309	37·5	34·2	3·3	3·5	2·1	1		10·0	Cirro-cumulous-scud; cirro-strati.
	4	341	36·5	34·4	2·1	2·5	1·0	1	— : 2 : —	10·0	Cirro-strati; patches of scud.
	5	361	36·4	32·8	3·6	1·8	0·5	0		10·0	Thick uniform mass of cirro-strati; patches of scud.
	6	383	34·9	31·4	3·5	0·5	0·2	0	— : 2 : 20	9·5	Cir.-cum.-scud; diffuse and woolly cirri, moving slowly.
	7	395	33·7	31·1	2·6	0·7	0·2	1		9·5	As before; less cirro-cumulous-scud.
	8	400	34·4	32·9	1·5	0·4	0·2	31		9·9	Scud and cirro-strati; shower of hail.
	9	424	34·1	32·2	1·9	0·5	0·7	31		8·5	Id.
	10	452	32·9	31·2	1·7	1·1	1·2	30	3 : — : 20	6·0	Scud; cirri.
	11	482	31·9	29·8	2·1	1·5	0·8	30	— : 24 : —	3·0	Cir.-cum.-str.; cumuli to NE.; coloured lunar corona.
	12	501	30·9	29·6	1·3	1·0	0·5	30		0·1	Light cirri.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	Baro-meter at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
4 13	29·518	28·5	27·0	1·5	0·2	0·0			0·0	Clear.
14	523	27·9	26·8	1·1	0·0	0·0			0·0	Id.
15	530	27·2	25·9	1·3	0·0	0·0			0·1	Patches of cirro-strati on horizon.
16	533	27·7	25·5	2·2	0·2	0·1	28	0 : — : —	0·2	Masses of scud; cirro-strati on horizon.
17	541	27·0	25·0	2·0	0·2	0·0			0·1	Scud and cirro-strati.
18	554	25·8	24·2	1·6	0·0	0·0			0·1	Clear; patches of cumuli on E. horizon.*
19	559	24·8	23·9	0·9	0·0	0·0	20		0·2	Cumuli on E. horizon.
20	566	25·4	24·7	0·7	0·0	0·0			0·2	Id.; hazy to E.
21	567	28·3	26·7	1·6	0·0	0·0	20		0·2	Id.; id.
22	570	31·9	29·0	2·9	0·0	0·0		0 : — : —	0·2	Cirro-stratous-scud; cirro-strati and haze to E.
23	566	34·2	31·1	3·1	0·5	0·5	27	— : — : 30	0·5	Woolly cirri; cumuli to E.
5 0	565	35·8	32·4	3·4	0·5	0·6	27	21 : — : —	0·7	Patches of scud; woolly cirri.
1	561	36·2	32·3	3·9	0·6	0·6	28	28 : — : —	2·0	Loose cumuli; cum., cir.-str., and haze to E. and N.
2	552	35·2	32·3	2·9	0·6	0·4	28		2·0	Cumuli and cumulo-strati on horizon.
3	545	37·3	32·4	4·9	0·6	0·2	28	28 : — : —	3·5	Id.
4	533	38·9	33·5	5·4	0·6	0·3	28	28 : 29 : —	8·7	Scud; cumuli.
5	529	37·5	32·4	5·1	0·5	0·2	28	28 : 29 : —	9·5	Id.; id.; cirro-cumulous clouds.
6	524	35·7	32·0	3·7	0·3	0·0			7·5	Id.; id.
7	523	34·0	31·0	3·0	0·0	0·0			8·0	Id.; id.
8	525	33·7	31·4	2·3	0·0	0·0			9·0	Id.
9	529	31·0	29·9	1·0	0·0	0·0			2·5	Cirro-cumulous-scud.
10	530	31·4	29·6	1·8	0·0	0·0			6·0	Id.
11	531	32·0	30·0	2·0	0·0	0·0			8·0	Id.
12	531	32·3	30·0	2·3	0·0	0·1	29	28 : — : —	10·0	Scud; cirro-cumulo-strati.
13	29·526	32·0	30·0	2·0	0·0	0·0		— : 30 : —	5·0	Thin cirro-strati; cirro-cumulo-strati.
14	523	30·8	28·2	2·6	0·0	0·0		— : 1 : —	6·0	Thick cir.-str.-scud; cir.-cum.-str.; lunar corona.
15	524	31·7	29·0	2·7	0·0	0·0			7·0	Thick clouds to S.; sky to N.
16	527	31·3	28·9	2·4	0·3	0·2	28		8·0	Id.
17	545	30·7	28·4	2·3	0·2	0·3	28	0 : — : —	6·0	Thick cirro-cumulous-scud.
18	552	28·9	27·0	1·9	0·3	0·2	28		0·0	Clear.
19	572	28·4	27·0	1·4	0·2	0·1	28		0·2	Scud and loose cumuli; linear cirri to E.
20	602	28·7	27·3	1·4	0·2	0·1			0·1	Id.; id.
21	618	31·1	28·9	2·2	0·1	0·1	28		0·2	Id.; id.
22	634	33·6	31·2	2·4	0·4	0·4	28		0·5	Id.; cirro-strati to E.
23	665	35·0	32·4	2·6	0·6	0·1	31	— : 3 : —	6·5	Cirro-cumulo-strati; id.
6 0	677	36·8	32·9	3·9	0·6	0·6	31	1 : 1 : —	3·5	Scud and loose cumuli; thin woolly cir.-cum.
1	701	37·3	33·5	3·8	0·7	0·3	31	0 : 0 : —	7·0	Id.; id.
2	709	36·4	32·9	3·5	1·9	2·1	0	0 : 0 : —	3·0	Id.; id.
3	728	37·7	33·3	4·4	2·5	2·3	0		3·5	Id.; id.
4	749	36·1	32·1	4·0	1·4	0·9	0		2·0	Id.; id.
5	766	35·9	32·2	3·7	1·4	0·8	0		9·7	Id.; id.; shower of hail.
6	797	34·3	31·9	2·4	0·8	0·1	30		9·5	Thick heavy cirro-stratous-scud.
7	806	34·1	30·9	3·2	1·3	0·2	30		9·5	Id.
8	830	33·9	31·5	2·4	0·5	0·2	31		9·7	Dark.
9	842	33·2	31·5	1·7	1·0	0·0	29		3·0	Masses of scud.
10	853	33·5	30·5	3·0	0·4	0·2	30		9·5	Scud.
11	877	33·7	30·9	2·8	0·3	0·1	30		10·0	Id.
12	881	33·5	31·2	2·3	0·3	0·1	30		9·9	Id.
13	29·890	32·9	31·2	1·7	0·2	0·2	29	0 : — : —	9·7	Cirro-cumulous-scud.
14	902	32·7	30·5	2·2	0·2	0·0	29	0 : — : —	9·9	Id.
15	910	32·1	30·5	1·6	0·0	0·0	28	0 : — : —	9·9	Id.
16	920	32·3	30·1	2·2	0·0	0·0	28	0 : — : —	9·9	Id.
17	934	32·7	30·7	2·0	0·0	0·0	28		10·0	Scud.
18	946	32·3	30·7	1·6	0·0	0·0	28		10·0	Id.
19	950	32·3	30·0	2·3	0·0	0·0		10 : — : —	10·0	Id.
20	969	32·5	30·7	1·8	0·2	0·0			10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

* See additional meteorological notes after the *Hourly Meteorological Observations*.

Gött. Mean Time.	Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
6 21	29·971	33·8	32·0	1·8	0·1	0·0		2 : — : —	10·0	Scud.
22	29·990	35·1	32·0	3·1	0·1	0·1	28	2 : — : —	10·0	Id.
23	29·999	36·3	34·2	2·1	0·1	0·1	30		10·0	Id.
7 0	30·013	37·7	33·3	4·4	0·1	0·0	29	1 : — : —	9·9	Id.
1	012	38·4	34·0	4·4	0·1	0·0	30	2 : — : —	9·5	Thin scud ; linear cirri.
2	011	38·4	33·7	4·7	0·0	0·0	31	2 : — : —	6·0	Masses of scud and loose cumuli ; cirri.
3	006	39·0	34·4	4·6	0·0	0·0			8·0	Id.
4	000	38·3	34·0	4·3	0·0	0·0			8·0	Id.
5	004	38·8	34·3	4·5	0·0	0·0			5·0	Id.
6	014	34·5	31·5	3·0	0·0	0·0		22 : — : —	4·0	Cirro-cumulous scud ; thick scud to E. ; cirri.
7	027	31·0	29·2	1·8	0·0	0·0			3·0	Scud, cirri, cirro-cumuli, and haze.
8	025	28·9	27·8	1·1	0·0	0·0			1·0	Id., id., id.
9	029	27·3	27·0	0·3	0·0	0·0			0·5	Cirro-strati to NNE. ; aurora.
10	028	26·9	26·8	0·1	0·0	0·0			1·5	Cirro-strati, radiating from N. ; aurora.
11	023	28·4	28·0	0·4	0·0	0·0			6·0	Cirrous clouds and haze over the sky.
12	023	30·2	28·9	1·3	0·0	0·0			10·0	Cirrous clouds.
13	30·011	31·1	29·6	1·5	0·0	0·0			10·0	Densely covered with clouds.
14	30·002	31·6	29·8	1·8	0·0	0·0			9·8	Cirro-strati and cirrous haze ; lunar halo.
15	29·991	31·5	29·8	1·7	0·0	0·0	18		10·0	Id.
16	969	32·0	30·1	1·9	0·0	0·0			10·0	Id.
17	945	33·2	31·0	2·2	0·0	0·0	17		10·0	Dense clouds.
18	946	33·7	31·6	2·1	0·0	0·0	18		10·0	Id. ; slight shower of snow at 18½h.
19	928	32·9	30·4	2·5	0·4	0·1	18		10·0	Slight shower of snow.
20	929	32·2	31·8	0·4	0·2	0·1	18		10·0	Id.
21	906	32·8	32·0	0·8	0·1	0·1	17		10·0	Id.
22	887	34·2	32·6	1·6	0·1	0·1	18		10·0	Id.
23	807	35·8	34·6	1·2	0·3	0·2	18		10·0	Sleet.
8 0	828	36·3	34·1	2·2	0·6	0·5	18	20 : — : —	10·0	Scud ; cir.-str., nearly homogeneous ; shower of hail.
1	806	35·3	34·3	1·0	0·9	1·1	18	20 : — : —	10·0	Id. ; sleet.
2	768	35·9	34·7	1·2	2·3	1·4	19	19 : — : —	10·0	Id. ; rain.
3	752	36·1	35·7	0·4	1·3	0·3	20	19 : — : —	10·0	Id. ; cirrous clouds ; rain.
4	722	36·3	36·0	0·3	2·1	0·6	19		10·0	Id.
5	701	37·1	36·2	0·9	1·6	0·6	20		10·0	Id.
6	674	38·0	37·0	1·0	1·2	1·2	19		10·0	Id.
7	660	38·4	37·3	1·1	3·1	1·3	20		10·0	
8	650	38·8	37·9	0·9	2·7	0·1	20		9·9	Scud ; a few stars visible.
9	617	40·7	39·9	0·8	0·5	0·1	20		9·9	Id. ; id.
10	580	40·0	39·1	0·9	0·8	2·0	20		9·8	Light rain.
11	552	39·5	38·9	0·6	1·9	1·2	20		10·0	Id.
12	513	41·3	40·4	0·9	1·3	0·5	22		10·0	Id. ; very dark.
13	29·496	43·9	42·3	1·6	0·2	0·1	21		10·0	Dark.
14	480	44·8	44·0	0·8	1·3	0·0			10·0	Rather light to E. and NE.
15	422	46·2	45·3	0·9	0·7	0·9	20		10·0	Light rain.
16	396	46·2	45·3	0·9	2·1	1·5	19		10·0	Dark.
17	386	47·0	46·1	0·9	2·2	0·6	19		10·0	
18	382	47·8	45·9	1·9	1·5	0·7	20	23 : — : —	10·0	Thick scud.
19	374	46·7	44·9	1·8	1·6	0·6	21	22 : — : —	10·0	Patches of loose scud ; cirro-strati and cirri.
20	328	45·9	44·3	1·6	2·3	3·9	19		10·0	Patches of scud ; cirro-strati.
21	275	47·9	45·4	2·5	4·3	5·0	19	21 : — : 23	10·0	Scud ; fibrous woolly cirri moving slowly.
22	270	48·1	45·1	3·0	5·4	4·9	20	22 : — : —	10·0	Id. ; woolly cirri and cirrous haze.
23	245	46·3	43·6	2·7	6·9	3·7	20	22 : — : —	10·0	Id. ; light rain.
9 0	200	47·3	44·6	2·7	5·4	6·2	20	23 : — : —	10·0	Scud.
1	157	47·1	44·2	2·9	7·6	6·3	21	23 : — : 25	9·9	Id. ; woolly cirri, moving rapidly.
2	168	48·4	44·9	3·5	8·0	9·0	24	25 : — : —	9·9	Id.
3	248	48·1	43·7	4·4	9·3	7·8	27	27 : — : 27	8·5	Id. ; woolly cirri ; cirro-strati.
4	361	48·5	44·0	4·5	7·7	5·0	27	— : 28 : —	5·0	Cirro-cumulo-strati.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0 10.	
9	5	29·433	48·4	43·0	5·4	5·6	4·2	28		2·0	Masses of scud; cirro-cumulo-strati; cir.-str. on hor.
	6	487	44·7	40·9	3·8	4·1	2·0	27		1·5	Patches of scud, cumuli, cirro-strati, and haze.
	7	498	42·8	39·7	3·1	2·9	1·3	25		0·9	Id.
	8	551	41·3	38·3	3·0	0·9	0·8	28		0·9	Id.
	9	577	40·6	38·1	2·5	1·1	0·0			0·0	Clear.
	10	574	38·5	36·8	1·7	0·1	0·1	20		3·0	Thick clouds on horizon.
	11	561	40·9	38·7	2·2	0·5	0·2	20		3·0	Scud and cirrous haze to N.; stars dim.
	12	566	39·7	37·8	1·9	0·5	0·0	20		2·0	Id.
10	0	......	...	...	...	1·0	...				
	13	29·232	41·3	39·9	1·4	3·8	1·5	20		10·0	Thick scud.
	14	209	43·0	41·9	1·1	1·2	0·8	20		10·0	Light rain.
	15	192	44·1	42·6	1·5	0·8	0·4	20		9·7	A few stars indistinctly visible.
	16	163	44·0	42·0	2·0	0·8	0·3	21		4·0	Scud.
	17	146	42·9	40·6	2·3	0·8	0·3	20		3·0	Id.; cirrous clouds; lunar corona.
	18	104	43·1	41·5	1·6	0·3	0·0			10·0	Id.; very light rain.
	19	053	42·9	41·3	1·6	0·5	0·4	20	24 : — : —	10·0	Id.; id.; cirrous clouds.
	20	29·007	42·7	41·1	1·6	0·5	0·4	20	24 : — : —	10·0	Id.; id.; id.
	21	28·973	42·9	42·0	0·9	0·4	0·3	20	24 : — : —	10·0	Id.
	22	936	44·5	42·3	2·2	0·4	0·6	20	24 : — : —	10·0	Id.; cirrous clouds.
	23	928	45·7	43·1	2·6	1·1	1·0	23	25 : — : —	9·9	Id.; woolly cirri.
11	0	931	46·2	43·2	3·0	0·7	0·5	24	25 : — : —	9·2	Id.; woolly and linear cirri.
	1	905	46·9	43·0	3·9	2·2	2·2	24		7·0	Id.
	2	900	46·2	42·0	4·2	2·6	5·0	22	26 : — : —	5·0	Id.; woolly cirri.
	3	913	40·0	38·5	1·5	4·9	1·2	23	24 : — : 24	5·0	Id.; id.; showers of rain and hail.
	4	921	40·3	38·0	2·3	5·5	3·9	24		9·5	Scud and loose cumuli; cirri; rain.
	5	877	39·7	36·3	3·4	2·2	1·5	25	— : — : 24	3·5	Woolly cirri; scud and cumuli on horizon.
	6	902	36·7	34·9	1·8	4·2	2·1	25	— : — : 28	3·0	Watery woolly cirri; cum. and nimb.; shower of sleet.
	7	918	35·7	33·6	2·1	1·9	1·4	26	26 : — : —	0·7	Masses of scud.
	8	938	35·7	33·0	2·7	1·3	1·8	22		1·0	Thin clouds; a few flakes of snow.
	9	917	33·4	32·3	1·1	2·3	1·6	22		4·0	Thin scud.
	10	921	33·6	30·8	2·8	0·8	0·8	22		1·0	Id. on horizon.
	11	919	33·6	31·0	2·6	2·5	2·2	24		3·0	Clouds on horizon.
	12	932	33·6	31·3	2·3	1·6	1·0	24		3·0	Scud; stars dimly visible.
	13	28·934	31·9	29·2	2·7	1·2	0·8	23		3·0	Scud; stars brighter.
	14	951	33·7	31·0	2·7	1·0	1·7	24		2·0	Patches of scud.
	15	959	32·0	30·9	1·1	1·9	0·6	25		2·0	Id.; thick clouds to N.
	16	976	32·5	31·0	1·5	1·1	1·5	24		1·5	Clouds to E.
	17	988	33·2	31·2	2·0	1·0	1·3	23		2·0	Id. to E. and SE.
	18	979	33·0	32·2	0·8	0·9	0·7	22	26 : — : —	2·0	Thin scud; scud on horizon and on Cheviot.
	19	967	33·4	31·1	2·3	2·3	0·2	22	26 : — : —	8·5	Scud; cirrous clouds; cirro-strati on E. horizon.
	20	946	33·0	32·0	1·0	0·3	0·0			10·0	Shower of snow.
	21	28·973	33·0	32·3	0·7	0·5	1·1	28	27 : — : 28	5·0	Scud moving quickly; woolly cirri; snow showers.
	22	29·001	34·6	32·3	2·3	2·7	2·3	26	— : — : 30	2·5	Woolly cirri; scud to SE.
	23	037	36·7	33·1	3·6	1·8	0·8	26		3·0	Id.; cirrous haze; cirro-strati.
12	0	057	38·0	35·0	3·0	1·0	0·2	26		10·0	Nearly homogeneous cirrous clouds and haze; scud to S.
	1	097	34·9	34·2	0·7	0·7	0·5	28	28 : — : 28	8·0	Scud in patches; cirri; occasional showers of snow.
	2	144	37·0	34·2	2·8	1·4	2·8	30	30 : 28 : —	3·5	Patches of scud; cir.-str. and haze; cum. on N. hor.
	3	205	39·5	35·6	3·9	2·3	2·5	30	30 : — : —	9·7	Scud; cirrous clouds.
	4	265	41·3	36·0	5·3	2·3	1·3	29	— : 28 : —	7·0	Cirro-stratous scud; patches of scud.
	5	302	38·8	34·8	4·0	2·3	1·7			2·0	Masses of scud and loose cumuli round horizon.
	6	349	38·3	35·3	3·0	1·9	1·2	28	29 : — : —	8·0	Scud.
	7	414	38·0	34·6	3·4	3·6	3·8	30	30 : — : —	5·0	Id.
	8	452	37·0	34·2	2·8	1·9	1·8	30		2·0	Clouds on E. and S. horizon.
	9	495	34·9	31·9	3·0	1·9	0·7	29		2·0	Id.
	10	543	33·5	30·9	2·6	0·4	0·0			0·9	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
12 11	29·577	32·7	31·0	1·7	0·0	0·0			0·1	Thin clouds; faint auroral light.
12	593	29·2	28·0	1·2	0·0	0·0			0·1	Patches of cirrous clouds to E.
13	29·602	30·3	28·4	1·9	0·0	0·0			0·5	Patches of cirrous clouds to N. and W.
14	607	30·3	29·0	1·3	0·0	0·0			1·5	Id., chiefly to NE.
15	611	31·3	29·9	1·4	0·0	0·0	23		1·7	Id.
16	617	30·4	29·2	1·2	0·2	0·0	21		0·5	Id.
17	622	29·3	28·5	0·8	0·0	0·0			0·2	Id.
18	633	29·2	28·0	1·2	0·0	0·0			0·2	Cirro-strati on E. horizon.
19	663	28·5	27·9	0·6	0·0	0·0			1·0	Cumuli, cirro-strati and patches of scud.
20	648	31·0	29·9	1·1	0·0	0·0			0·5	Cirro-strati; scud on Cheviot; haze on E. horizon.
21	667	34·9	32·2	2·7	0·0	0·0	17		0·2	Cirro-strati to E.
22	673	37·7	33·6	4·1	0·6	0·4	28		0·2	Id.
23	686	39·3	34·5	4·8	1·3	1·1	28	29 : — : —	4·0	Scud; loose cumuli, cirro-strati, and cirri.
13 0	687	39·8	35·0	4·8	1·3	1·5	29		2·0	Masses of cumuli on horizon; patches of scud.
1	706	40·1	34·9	5·2	1·7	0·9	29	30 : — : —	2·0	Scud; masses of cumuli on horizon.
2	708	39·2	34·2	5·0	1·3	0·4	30	30 : — : —	6·0	Scud and cumuli.
3	710	40·2	35·3	4·9	0·5	0·2	30		6·5	Id.
4	708	41·3	36·7	4·6	0·4	0·1	29	29 : — : —	6·5	Id.
5	709	37·8	33·9	3·9	0·1	0·0	30		4·0	Id.; cirro-strati to E.
6	710	38·2	34·0	4·2	0·0	0·0		28 : — : —	3·0	Loose cumuli and cumulo-strati; cirro-strati; scud.
7	712	35·9	31·9	4·0	0·0	0·0	30	28 : 28 : —	2·5	Scud and cirro-strati; sky hazy; red to E.
8	712	37·0	32·3	4·7	0·0	0·0			8·5	Scud.
9	710	36·2	32·2	4·0	0·0	0·0			9·7	Id.
10	705	35·0	32·2	2·8	0·0	0·0			9·7	Id.
11	695	34·4	32·4	2·0	0·0	0·0			9·5	Id.
12	691	34·1	32·3	1·8	0·0	0·0			9·5	Id.
13	29·678	33·8	32·3	1·5	0·0	0·0			9·7	Scud.
14	670	33·6	32·0	1·6	0·0	0·0			10·0	Id.
15	660	33·4	31·8	1·6	0·0	0·0			9·5	Id.
16	653	32·6	31·0	1·6	0·0	0·0			4·0	Id., clearing off.
17	648	30·3	29·1	1·2	0·0	0·0			3·0	Id.
18	638	27·7	...	...	0·0	0·0			2·0	Id.; cirro-strati to E.
19	637	28·7	27·4	1·3	0·0	0·0		— : 26 : —	8·5	Cirro-cumulous scud; streaks of cirri.
20	632	30·2	29·9	0·3	0·0	0·0	30	27 : 28 : —	7·0	Id., two currents.
21	632	32·3	31·4	0·9	0·0	0·0	25		6·0	Scud, cumuli, cirri, cirro-cumuli.
22	627	35·5	32·7	2·8	0·0	0·0		— : 28 : 28	3·0	Woolly cirri and cir.-cum.-str.; cirrous haze; scud.
23	614	37·2	34·3	2·9	0·0	0·0	12	— : — : 28	2·5	Woolly cirri; cirri radiating from NW by N.; scud.
14 0	602	39·7	35·0	4·7	0·0	0·0		20 : — : 28	4·0	Pat. of scud; var. of cirri radiating from NW.; cir.-cum.
1	580	42·1	37·0	5·1	0·0	0·0	12	15 : 30 : 28	6·0	Scud; cir.-str. scud; cirri; solar halo.
2	565	44·4	38·8	5·6	0·2	0·0	14	16, 14, 17 : — : 28	9·0	Scud in various currents; cirri and cir. haze; halo.
3	548	45·0	39·8	5·2	0·6	0·2	15	— : 0 : 24	9·5	Cir.-str.; woolly cirri; patches of scud.
4	524	45·0	39·3	5·7	0·2	0·1	15		9·9	Id.; id.; thick haze to E.
5	505	43·7	39·0	4·7	0·3	0·1	14	— : 16 : —	10·0	Cirro-cumulo-strati; cirrous haze.
6	496	40·6	36·3	4·3	0·3	0·2	12	— : 16 : —	10·0	Id.; id.
7	485	38·3	35·1	3·2	0·2	0·0	14	— : 14 : —	10·0	Id.; id.
8	470	38·0	34·8	3·2	0·2	0·1	13		10·0	Cirrous haze.
9	452	37·9	34·6	3·3	0·3	0·3	13		10·0	Dark; a few drops of rain.
10	435	37·5	34·5	3·0	0·5	0·5	15		10·0	Id.
11	418	36·5	34·2	2·3	1·0	0·5	14		10·0	Light rain.
12	409	36·5	33·9	2·6	0·5	0·1	9		10·0	A few flakes of snow.
13	29·391	36·4	32·7	3·7	0·0	0·2	6		10·0	Snow falling pretty heavily.
14	370	34·5	32·9	1·6	0·2	0·1	7		10·0	Light snow.
15	353	33·8	33·3	0·5	0·2	0·0			10·0	Id.
16	314	33·2	33·0	0·2	0·0	0·1	4		10·0	Snowing more heavily.
17	293	33·2	32·9	0·3	0·1	0·0			10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
14	18	29·284	33·4	32·3	1·1	0·2	0·0			10·0	Snowing more heavily.
	19	265	33·3	33·0	0·3	0·2	0·2	3		10·0	Slight fall of sleet.
	20	269	33·6	33·2	0·4	0·3	0·2	6		10·0	Id. snow.
	21	266	33·9	33·5	0·4	0·3	0·3	4	8 : — : —	10·0	Scud ; nearly homogeneous ; slight snow.
	22	269	34·3	33·9	0·4	1·5	1·4	6		10·0	Snow falling pretty heavily ; scud.
	23	272	34·7	34·0	0·7	2·7	1·2	6		10·0	Id. ; id.
15	0	279	34·3	34·0	0·3	1·4	0·9	5		10·0	Snowing rather heavily.
	1	288	34·7	34·4	0·3	0·9	0·5	5		10·0	Id. id.
	2	289	34·9	34·3	0·6	1·3	0·4	6		10·0	Sleet id.
	3	296	34·4	34·3	0·1	1·0	1·4	6		10·0	Id. id.
	4	308	34·3	34·0	0·3	1·2	0·8	5		10·0	Id. id.
	5	324	33·6	33·3	0·3	0·6	0·4	6		10·0	Snowing. id.
	6	336	33·3	33·0	0·3	0·7	0·4	4		10·0	Id. id.
	7	346	33·0	32·9	0·1	0·6	0·5	4		10·0	Id.
	8	361	33·4	33·2	0·2	0·4	0·6	4		10·0	Id. lightly.
	9	373	32·9	32·5	0·4	1·3	0·5	4		10·0	Id. id.
	10	398	33·3	33·0	0·3	1·2	0·8	6		10·0	Snow ceased.
	11	424	34·2	33·3	0·9	1·3	2·6	4		10·0	Slight shower of hail since 10h.
	12	437	33·9	33·0	0·9	2·1	1·0	4		10·0	Snowing since soon after last observation.
	13	29·454	33·6	32·9	0·7	2·6	0·6	4		10·0	Snow showers.
	14	471	34·9	32·8	2·1	1·9	2·5	3		10·0	Fair.
	15	491	34·8	32·7	2·1	2·3	2·6	4		10·0	Snow showers.
	16	515	34·3	31·7	2·6	2·4	2·3	3		8·0	Sky to NW.
	17	531	33·1	30·9	2·2	2·7	1·2	3		3·0	Clouds to E. and SE.
	18	552	32·8	31·2	1·6	2·9	2·2	3	6 : — : —	7·0	Scud and nimbi ; hail shower ; black to SE.
	19	565	32·6	30·8	1·8	2·4	2·0	5	4 : — : —	5·0	Thick scud ; cumuli ; woolly cirri ; shower of hail.
	20	585	32·9	30·2	2·7	1·3	0·7	6	6 : — : —	7·0	Scud ; snow showers around.
	21	618	34·0	32·0	2·0	2·0	1·8	6	6 : — : —	4·0	Scud and loose cumuli ; patches of linear cirri.
	22	643	31·8	31·4	0·4	4·2	2·2	5		10·0	Showers of snow ; heavy drift.
	23	654	34·7	32·3	2·4	2·2	2·0	4	6 : — : —	8·0	Cirro-stratous scud ; cumuli and haze on E. horizon.
16	0	678	35·3	32·6	2·7	2·9	2·3	5	8 : — : —	3·5	Scud, loose cumuli.
	1	708	35·2	32·0	3·2	3·6	2·0	6		9·5	Id., frequent showers of hail.
	2	722	35·2	33·3	1·9	2·4	1·9	6		10·0	Snowing.
	3	739	34·8	33·0	1·8	2·5	2·0	5		10·0	Id. lightly.
	4	750	34·6	32·1	2·5	2·7	2·2	6		10·0	Snow ceased.
	5	766	34·3	31·7	2·6	2·5	1·5	6	6 : — : —	10·0	Scud.
	6	798	33·8	32·1	1·7	1·4	0·9	6		9·9	Id.
	7	827	33·2	30·6	2·6	1·4	0·5	6		10·0	Id.
	8	847	33·0	31·0	2·0	1·3	0·7	6		10·0	Id.
	9	869	33·2	30·7	2·5	2·0	1·7	5		10·0	Id.
	10	900	33·0	31·1	1·9	1·6	0·7	5		10·0	Dark.
	11	916	32·9	30·1	2·8	2·0	0·4	5		9·0	Scud.
	12	920	32·9	30·2	2·7	0·9	0·5	4		10·0	Id.
17	13	30·054	20·4	…	…	0·8	0·0			0·2	Cirrous haze to NE.
	14	055	19·8	20·0	…	0·0	0·0			0·2	Id. ; stars dim.
	15	035	19·8	19·8	…	0·0	0·0			0·1	Id. ; id.
	16	030	19·6	19·7	…	0·0	0·0			0·2	Id. E., id.
	17	30·021	19·0	19·0	…	0·0	0·0			0·2	Cirro-strati to NE. ; stars dim.
	18	29·996	19·7	19·7	…	0·0	0·0		— : 4 : —	2·0	Cirro-cumuli ; cirri and cirro-strati ; cirrous haze.
	19	997	19·3	19·3	…	0·0	0·0		— : 6 : —	8·0	Bands of cir.-cum. radiating from WNW. ; cir.-str., cir.
	20	993	23·0	22·9	0·1	0·0	0·0	23		9·9	Cirro-cumulous scud ; sky to SW.
	21	993	27·8	26·9	0·9	0·0	0·0	20	— : 3 : —	9·7	Id.
	22	993	32·4	30·9	1·5	0·0	0·0	20		9·7	Id., very light rain.
	23	992	36·5	32·4	4·1	0·0	0·0			9·7	Id. ; sky to N. and S.
18	0	997	40·1	37·0	3·1	0·0	0·0	20		10·0	Id.
	1	978	45·1	41·4	3·7	0·0	0·0	22		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

March 18d 1h. New silk put on wet-bulb thermometer before this observation.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0–10.	
18	2	29·966	43·7	39·3	4·4	0·0	0·0	26	0 : 0 : —	9·9	Thin scud and cirro-cumuli; sky to NW.
	3	950	45·3	41·0	4·3	0·0	0·0	28		10·0	Cirro-cumulo-strati; scud.
	4	942	45·2	41·3	3·9	0·0	0·0		0 : — : —	10·0	Scud; cirrous clouds.
	5	936	43·2	40·0	3·2	0·0	0·0			10·0	Id.; id.
	6	944	40·1	38·3	1·8	0·1	0·0		30 : — : —	9·7	Id.; id.
	7	955	38·6	37·5	1·1	0·0	0·0		31 : 31 : —	9·7	Loose smoky scud; cirro-cumulous scud; sky milky.
	8	952	37·4	36·7	0·7	0·0	0·0			10·0	Scud and cirro-cumulous scud.
	9	955	36·5	35·8	0·8	0·0	0·0			10·0	Dark.
	10	952	36·0	35·3	0·7	0·0	0·0			9·5	A few stars faintly visible in zenith.
	11	943	35·8	35·1	0·7	0·0	0·0			10·0	Dark.
	12	942	36·0	35·4	0·6	0·0	0·0			10·0	Id.
	13	29·936	35·9	35·3	0·6	0·0	0·0			10·0	Dark.
	14	915	35·8	35·2	0·6	0·0	0·0			10·0	Id.; clouds a little broken.
	15	909	35·8	35·1	0·7	0·0	0·0			10·0	Scud and cirrous haze; occasional breaks in clouds.
	16	884	35·8	35·0	0·8	0·0	0·0			3·0	Cirrous clouds and scud; stars faint near horizon.
	17	867	34·9	34·1	0·8	0·0	0·0			0·7	Cirrous clouds to E.
	18	862	33·7	33·0	0·7	0·0	0·0	20	28 : — : —	0·7	Patches of scud; cirro-cumuli, cirri.
	19	861	35·0	34·0	1·0	0·0	0·0		— : 30 : —	1·5	Cirro-cumulo-strati; cirro-strati on horizon.
	20	852	37·2	35·9	1·3	0·0	0·0	24	— : 30 : 30	1·0	Cirro-strati and cirri.
	21	844	38·5	37·2	1·3	0·0	0·0	25		4·0	Cirri, cirro-strati, cirro-cumuli, and cirrous haze.
	22	835	42·3	39·9	2·4	0·0	0·0			7·0	Thin cirri and cirrous haze; loose scud on SE. hor.
	23	817	42·8	40·2	2·6	0·4	0·3	25		7·0	Id.; faint solar halo.
19	0	794	44·2	41·3	2·9	0·2	0·1	24		10·0	Cumuli; cirri and cirrous haze; solar halo.
	1	758	45·8	42·0	3·8	0·4	0·6	26		10·0	Patches of scud; cumuli, cirri, cirrous haze; solar halo.
	2	744	48·0	43·3	4·7	0·7	0·1	25	28 : — : —	10·0	Scud and cumuli; cirri and haze become thicker.
	3	720	46·7	42·7	4·0	0·3	0·1	24	27 : — : —	10·0	Scud; homogeneous mass of cirri and haze.
	4	689	45·6	41·7	3·9	0·1	0·3	25	26 : — : —	10·0	Scud and loose cumuli; thick cirro-strati.
	5	672	45·1	41·7	3·4	0·2	0·1	24	28 : — : —	10·0	Scud; thick cirro-strati and cirrous haze. [pearance.
	6	644	42·7	39·8	2·9	0·3	0·1	25	28 : — : —	10·0	Id.; dense cir.-str., with dripping and mottled ap-
	7	623	41·9	38·9	3·0	0·7	0·4	22	26 : — : —	10·0	Id.; cirrous clouds much thinner.
	8	588	40·9	38·3	2·6	0·6	0·3	23		10·0	Scud and cirri.
	9	555	40·9	38·7	2·2	0·4	0·3	21		10·0	Id.
	10	508	41·4	39·3	2·1	1·3	0·8	20		10·0	Id.
	11	449	42·6	40·2	2·4	1·4	0·4	20		10·0	Id.
	12	418	42·0	40·0	2·0	0·6	0·2	20		10·0	Very dark.
	13	29·370	44·0	41·9	2·1	1·0	0·3	20		10·0	Very dark; light rain.
	14	333	44·5	42·5	2·0	0·9	0·5	26		10·0	Id.; rain.
	15	301	44·4	42·1	2·3	1·3	0·9	24		10·0	Id.; light rain.
	16	278	43·3	41·0	2·3	0·8	0·2	25		10·0	
	17	261	42·6	40·0	2·6	0·3	0·2	26		10·0	Light rain.
	18	231	41·5	39·7	1·8	0·1	0·0	26		10·0	Scud; cirro-strati to E.
	19	243	41·3	39·6	1·7	0·3	0·1	29		10·0	Nearly homogeneous; light rain commenced.
	20	253	40·7	39·4	1·3	0·2	0·1	29	29 : — : —	10·0	Thick scud; heavy shower.
	21	300	38·3	37·4	0·9	1·7	0·8	2	2 : — : —	10·0	Thick mass of scud; drops of rain.
	22	363	35·9	35·3	0·6	1·7	1·1	2		10·0	Scud; showers of rain, snow, and sleet.
	23	414	37·3	35·9	1·4	2·4	1·2	3	3 : — : —	10·0	Id.; showers of sleet.
20	0	466	38·2	34·2	4·0	3·7	2·1	2	3 : — : —	8·5	Scud and loose cumuli.
	1	506	37·9	34·0	3·9	2·7	1·8	3	3 : — : —	9·5	Id.; a few flakes of snow.
	2	537	39·0	33·4	5·6	2·3	1·6	2	2 : — : —	3·5	Detached loose cumuli.
	3	557	38·7	33·3	5·4	2·4	1·5	2	3 : — : —	3·5	Id.
	4	589	39·0	34·3	4·7	2·1	1·2	2	3 : — : —	1·5	Id.
	5	617	38·0	32·9	5·1	1·4	0·6	2	3 : — : —	3·5	Id.
	6	639	37·2	32·1	5·1	0·6	0·2	2	3 : — : —	1·0	Id.
	7	652	34·3	31·5	2·8	0·2	0·0			2·0	Loose cumuli; linear cirri.
	8	669	34·0	31·0	3·0	0·0	0·0		4 : — : —	6·0	Thick scud.
	9	687	32·2	30·6	1·6	0·0	0·0			0·5	Clouds to SE.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

March 19d 7h. The cirri have an appearance of radiating from NW., with arcs of circles from NW. as a centre crossing the radiations; cymoid cirri in some places; cirri quite red; blue to E.

March 19d 19h. Observation made at 19h 25m.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
20 10	29·708	32·9	31·2	1·7	0·0	6·0			2·0	Clouds and haze on horizon.
11	726	32·2	30·3	1·9	0·0	0·0			1·5	Clouds to SW.; haze on horizon.
12	736	30·2	28·9	1·3	0·0	0·0			0·7	Clouds and haze on E. horizon.
13	29·758	30·6	28·9	1·7	0·0	0·0			0·0	Clear.
14	756	30·5	28·8	1·7	0·0	0·0			0·0	Id.
15	742	28·8	27·8	1·0	0·0	0·0			0·0	Id.
16	766	27·9	27·4	0·5	0·0	0·0			0·0	Id.
17	767	27·7	27·0	0·7	0·0	0·0			0·1	Patches of cirro-strati to N.; stars rather faint.
18	760	28·1	26·9	1·2	0·0	0·0			0·2	Cirri, cirro-strati, and cirrous haze.
19	769	27·9	26·8	1·1	0·0	0·0			0·1	Id., id., id.
20	773	30·1	28·6	1·5	0·0	0·0	22		0·2	Cirro-strati and cirrous haze on horizon.
21	762	33·0	30·7	2·3	0·0	0·0	22		0·2	Id. N. and E.
22	754	37·1	32·9	4·2	0·0	0·2	20	24 : — : 31	4·0	Scud; cirrous haze and woolly cirri.
23	752	39·6	35·0	4·6	0·5	0·2	21	24 : — : —	3·0	Loose scud; cirri and cirrous haze.
21 0	735	41·1	36·0	5·1	0·5	0·3	20	24 : — : —	6·0	Scud; cirrous haze and cirri.
1	708	42·4	37·7	4·7	0·9	0·4	20	24 : — : —	8·7	Id.
2	686	44·5	39·3	5·2	1·1	0·8	21	24 : — : —	8·0	Id.
3	666	44·5	39·7	4·8	1·0	0·3	21	24 : — : —	9·0	Id.; diffuse cirri and cirrous haze.
4	643	43·4	38·7	4·7	0·8	1·2	25	24 : — : —	9·0	Id.
5	614	42·9	38·9	4·0	1·0	0·6	21	24 : — : —	9·7	Id.; cirrous haze.
6	599	41·9	37·9	4·0	0·6	0·9	20	24 : — : —	9·7	Id.; id.
7	588	40·8	37·6	3·2	1·0	0·4	20	26 : — : —	10·0	Id.
8	562	40·3	37·1	3·2	0·7	0·3	21	24 : — : —	10·0	Id.
9	535	39·8	36·9	2·9	0·6	0·6	19		3·0	Thin clouds and haze.
10	518	38·0	36·3	1·7	0·8	0·2	20		2·0	Masses of scud; stars dim in some places.
11	505	38·4	37·0	1·4	0·3	0·1	20		7·0	Scud; dense clouds on N. horizon.
12	480	38·3	36·9	1·4	0·2	0·1	20	24 : — : —	6·5	Id.
13	29·463	37·9	36·5	1·4	0·3	0·0	19		7·0	Scud.
14	435	38·9	37·3	1·6	0·3	0·0	19		8·7	Id.; sky to N.
15	408	38·4	37·2	1·2	0·2	0·2	18		9·0	Id.; sky to S.
16	378	38·9	37·7	1·2	0·2	0·1	19		9·5	Scud and cirrous haze; stars very faint.
17	358	39·1	37·9	1·2	0·1	0·0	19		10·0	Id.
18	336	37·3	36·2	1·1	0·5	0·4	19	24 : — : 0	8·0	Scud; cirri and cirrous haze; cirro-strati.
19	316	35·7	35·1	0·6	0·3	0·0		20 : 24 : 0	4·0	Loose scud; cirro-cumulous scud; cirri and cir. haze.
20	297	40·9	39·7	1·2	0·4	0·1	20	20 : 26 : —	8·0	Id.; cirro-cumulo-strati; cirro-strati.
21	274	43·2	41·2	2·0	0·7	0·6	20	20 : — : —	8·5	Id.; id.
22	272	44·0	41·5	2·5	1·1	0·6	18	20 : 22 : 22	8·5	Scud; cirro-cumulo-strati; woolly and linear cirri.
23	255	46·0	43·6	2·4	1·5	0·4	19	20 : — : —	10·0	Id.; cirrous clouds.
22 0	236	46·7	44·2	2·5	0·5	0·5	19		10·0	Id.; becoming dark to W.
1	220	46·4	43·1	3·3	1·0	0·2	19	20 : — : —	10·0	Id.
2	212	46·3	44·3	2·0	0·4	0·4	20	21 : — : —	10·0	Id.
3	200	48·8	46·0	2·8	0·2	0·1	21	22 : — : —	10·0	Id.
4	198	50·1	46·9	3·2	0·2	0·0	26	25 : — : —	10·0	Id.
5	194	50·3	46·2	4·1	0·0	0·0		24 : — : —	10·0	Id.
6	199	47·1	44·3	2·8	0·1	0·0	30	24 : — : —	9·7	Dense masses of scud; cumuli; woolly cirri.
7	211	45·0	43·1	1·9	0·1	0·0	30	26 : — : —	10·0	Scud, moving very slowly.
8	226	43·7	42·5	1·2	0·0	0·0			10·0	Dark; light rain.
9	238	42·5	41·7	0·8	0·0	0·0			10·0	Id.
10	248	42·0	41·2	0·8	0·0	0·0			10·0	Id.; rain.
11	251	40·8	40·2	0·6	0·0	0·0			10·0	Id.; light rain.
12	266	39·2	38·3	0·9	0·2	0·2	28		10·0	Heavy rain.
13	29·283	38·6	37·9	0·7	0·2	0·0			10·0	Light rain.
14	283	38·8	37·2	1·6	0·0	0·0			10·0	Fair.
15	290	39·2	38·2	1·0	0·1	0·0			10·0	Scud.
16	296	38·7	37·4	1·3	0·2	0·1	28		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
22	17	29·306	38·1	37·1	1·0	0·2	0·1	29		10·0	Scud.
	18	330	38·0	37·0	1·0	0·2	0·2	30		10·0	Light rain; heavy showers since last observation.
	19	346	38·0	37·0	1·0	0·3	0·2	30	3 : — : —	10·0	Scud; light rain.
	20	357	38·0	37·1	0·9	0·5	0·4	29	3 : — : —	10·0	Id.; rather heavy rain.
	21	367	39·7	38·5	1·2	0·3	0·3	28		10·0	Uniform cirrous mass; light rain.
	22	374	42·6	40·8	1·8	0·3	0·3	31	1 : 0 : —	9·5	Loose scud moving quickly; cir.-str. scud, slowly.
	23	376	43·3	41·0	2·3	0·5	0·3	0	1 : 0 : —	9·0	Id. cirro-cumulo-strati.
23	0	384	45·3	42·3	3·0	0·3	0·3	0	1 : — : —	9·9	Scud; cirrous clouds.
	1	384	45·9	42·6	3·3	0·5	0·5	31	1 : — : 31	8·0	Id.; woolly cirri.
	2	380	47·0	42·0	5·0	0·5	0·3	31		9·0	Id.; id.
	3	373	47·0	42·7	4·3	0·3	0·2	0		9·5	Id.
	4	358	47·2	42·9	4·3	0·2	0·1	5	— : 28 : —	7·0	Cirro-cumulo-strati; scud and cumuli on horizon.
	5	342	45·6	42·1	3·5	0·0	0·0	6	26 : — : —	8·0	Scud; cirro-cumulo-strati.
	6	336	44·2	41·5	2·7	0·0	0·0	7	24 : — : —	9·0	Id.; id.
	7	327	42·0	40·0	2·0	0·0	0·0	14	23 : — : —	8·5	Id.; cirro-strati and cirrous haze to E.
	8	317	41·0	39·4	1·6	0·0	0·0		22 : — : —	9·0	Id.
	9	286	40·5	39·2	1·3	0·0	0·0			1·5	Clouds to E.
	10	267	36·0	35·2	0·8	0·0	0·0		20 : — : —	2·5	Cirro-cumulous scud.
	11	258	37·2	36·6	0·6	0·0	0·0			3·5	Scud.
	12	250	38·3	37·3	1·0	0·1	0·1	18		8·0	Id.
24	0	28·955	...	...	...	3·3	...	25		...	Barometer rising.
	13	29·218	37·0	36·7	0·3	2·8	0·2	20		3·0	Cirrous clouds, radiating from WNW; moving from [WNW. at 6^h.
	14	222	38·0	36·3	1·7	0·6	0·2	20		10·0	Dark.
	15	223	38·9	37·0	1·9	0·2	0·3	20		9·7	Cirrous clouds; stars very faint.
	16	225	39·0	37·3	1·7	0·3	0·1	20		10·0	Id.; id.
	17	214	39·1	37·7	1·4	0·3	0·2	20		10·0	Id.; id.
	18	233	39·8	38·3	1·5	0·2	0·1	20	24 : — : —	10·0	Scud; clouds tinged with red to E.
	19	228	40·2	38·7	1·5	0·1	0·0		21 : — : —	10·0	Id.
	20	220	40·3	39·1	1·2	0·0	0·0		20 : — : —	10·0	Id.; cirrous clouds.
	21	206	42·9	41·0	1·9	0·2	0·1	18	20 : 22 : —	10·0	Loose scud to NW. and E.; thick semifluid cir.-str.
	22	187	43·6	42·0	1·6	0·4	0·3	19	— : 18 : —	10·0	Id. to N. and E.; thick cir.-str.; drops of rain.
	23	168	44·4	42·7	1·7	0·3	0·4	17		10·0	Id. id.; fair.
25	0	136	45·3	43·0	2·3	0·6	0·4	17	— : 18 : —	10·0	Thick semifluid cirro-strati; light rain.
	1	073	47·0	44·0	3·0	0·8	0·9	19	— : 17 : —	10·0	Id.; raining lately.
	2	29·025	47·2	44·2	3·0	1·8	1·9	17	17 : — : —	10·0	Scud.
	3	28·976	45·8	45·0	0·8	1·5	1·4	17	16 : — : —	10·0	Id.; raining.
	4	918	46·0	45·3	0·7	1·8	0·6	18	17 : — : —	10·0	Id.; rain.
	5	909	47·2	46·2	1·0	1·4	1·2	24	20 : — : —	10·0	Id.
	6	926	46·3	44·0	2·3	0·5	0·1	19	24 : — : —	7·0	Id.; nimbi to E.
	7	917	45·0	42·3	2·7	0·4	0·3	20	24 : — : —	3·5	Id.; id.
	8	918	43·0	40·9	2·1	0·5	0·3	20	24 : — : —	2·0	Id., cirro-cumulous scud and nimbi.
	9	918	42·6	40·7	1·9	0·6	0·2	20		10·0	Id.; light rain.
	10	921	43·0	41·4	1·6	0·2	0·2	21		10·0	Id.; id.
	11	932	42·8	41·9	0·9	0·2	0·2	24		4·0	Loose scud; cirro-strati.
	12	982	46·3	43·6	2·7	1·3	2·1	28		9·0	Scud.
	13	29·042	43·6	40·4	3·2	3·0	1·1	29		2·0	Scud on horizon.
	14	120	41·7	39·4	2·3	0·9	0·1	29		3·0	Scud.
	15	156	41·9	38·9	3·0	1·5	0·7	28		1·5	Id.
	16	186	39·7	37·5	2·2	0·2	0·6	31		0·0	Stars rather faint.
	17	251	39·2	37·1	2·1	0·6	0·1	28		2·0	Scud.
	18	275	37·6	36·0	1·6	0·2	0·0			1·0	Masses of scud on horizon.
	19	313	37·0	35·7	1·3	0·1	0·0		— : — : 30	1·0	Woolly and diffuse cirri moving slowly; cir.-str. scud.
	20	355	40·0	38·3	1·7	0·0	0·0	16	— : — : 29	6·5	Woolly, mottled, and diffuse cirri; scud to E.
	21	370	42·5	40·0	2·5	0·0	0·0			6·0	Cirri and cirrous haze; patches of scud.
	22	388	46·3	42·3	4·0	0·2	0·0	28	30 : — : 30	3·5	Scud; cirri and cirrous haze.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

March 25^d 20^h—21^h. The observations were made at 20^h 5^m and 21^h 5^m.

Gött. Mean Time.	Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
25 23	29·404	48·7	43·9	4·8	0·0	0·0	28	30 : — : —	8·0	Scud; loose cumuli; cirri and cirrous haze; solar halo.
26 0	410	49·3	43·7	5·6	0·0	0·0	0	— : 26 : —	9·0	Cirro stratous scud; linear cirri to E. and W.
1	422	53·5	47·5	6·0	0·0	0·0		24 : — : —	9·5	Scud; varieties of cirri.
2	433	53·9	47·9	6·0	0·0	0·0	17	24 : — : —	9·0	Masses of scud; cirro-strati, cirro-cumuli, cirrous haze.
3	431	55·2	49·0	6·2	0·0	0·0	16	19 : — : —	9·5	Scud; cirrous haze.
4	429	53·9	47·8	6·1	0·1	0·1	20	19 : 21 : 26	7·0	Id.; loose cumuli; cirro-cumuli; cymoid cirri.
5	431	52·0	47·2	4·8	0·4	0·3	20	— : 24 : —	9·0	Cirro-cumulous scud; many varieties of clouds.
6	438	49·0	45·3	3·7	0·5	0·3	18	20 : 26 : —	9·8	Scud; viscous cir.-cum.-str. in ridges, lying NNW. to
7	452	46·4	43·9	2·5	0·3	0·1	19	19 : 24 : —	10·0	Loose scud; cir.-cum.-str.; cirrous haze. [SSE.
8	458	46·7	44·6	2·1	0·1	0·0			10·0	Dense mass of cirro-strati.
9	451	46·9	44·7	2·2	0·1	0·1	18		10·0	Id.
10	449	46·9	44·9	2·0	0·6	0·3	18		10·0	Id.
11	431	46·7	44·7	2·0	0·2	0·1	17		10·0	Id.
12	436	45·9	45·0	0·9	0·2	0·2	18		10·0	Rain.
13	29·416	47·1	46·2	0·9	0·3	0·2	20		10·0	Light rain.
14	419	47·4	46·4	1·0	0·3	0·1	22		10·0	Fair; light on S. horizon.
15	409	47·7	46·3	1·4	0·4	0·3	20		6·0	Clear in zenith; scud all round.
16	402	47·5	46·3	1·2	0·4	0·3	19		8·0	Thick scud.
17	394	47·9	46·7	1·2	0·7	0·0	19		10·0	Rain; dark.
18	408	48·1	46·6	1·5	0·2	0·2	20	24 : — : —	10·0	Scud.
19	417	48·0	47·0	1·0	0·4	0·6	20	20 : — : —	10·0	Loose scud; dense cirro-strati; light drizzle.
20	425	48·0	47·0	1·0	0·6	0·4	20		10·0	Thick cirro-strati; loose stratus on Cheviot.
21	448	49·1	47·8	1·3	0·2	0·0		20 : — : 20	9·5	Scud; woolly cirri and cir.-cum.; drizzle before this.
22	458	51·1	49·0	2·1	0·2	0·2	20	20 : — : —	10·0	Id.; dense cir.-str. and haze; halo at $21^h\ 15^m$.
23	484	54·1	51·1	3·0	0·2	0·4	21	22 : 22 : —	9·8	Id.; cir.-str. and cir. haze; slight shower at $23^h\ 5^m$.
27 0	501	54·3	51·1	3·2	0·2	0·1	20	24 : — : 20	6·0	Loose scud; woolly cirri and cir. haze; strips of linear
1	518	58·7	53·7	5·0	0·3	0·3	21	24 : — : —	9·0	Scud and loose cumuli; cir.-str. and cirri. [cirri.
2	537	56·2	50·1	6·1	0·5	0·0	20	23 : — : —	4·0	Loose cumuli; cirro-strati to E.
3	554	57·2	49·7	7·5	0·5	0·2	21	22 : — : —	3·5	Loose-edged cumuli.
4	527	57·1	49·0	8·1	1·4	0·5	20	23 : — : —	2·5	Cumuli.
5	612	51·0	48·0	3·0	1·9	0·2	25	22 : 22 : —	9·0	Scud; cirrous scud; shower 15^m ago.
6	635	51·9	46·7	5·2	0·5	0·8	25		3·0	Id. and loose cumuli.
7	684	49·0	46·1	2·9	1·3	0·1	23	26 : — : —	9·5	Id.; cumuli and cirro-strati on E. horizon.
8	726	47·0	44·2	2·8	0·2	0·1	22	26 : — : —	2·5	Id.
9	773	45·9	42·5	3·4	0·5	0·3	23	26 : — : —	3·0	Id.
10	818	44·6	41·8	2·8	0·8	0·1	21		0·2	Masses of loose scud; cirro-strati near horizon.
11	850	41·6	39·9	1·7	0·2	0·1			0·1	A patch of scud to S.; sky clear.
12	883	40·8	39·0	1·8	0·1	0·0	22		0·5	Cirro-strati to E.
13	29·919	38·3	37·1	1·2	0·0	0·0	18	0 : — : —	0·7	Patches of scud; cirro-strati to E.
14	917	36·6	35·3	1·3	0·0	0·0	18	— : 0 : —	3·0	Cirro-cumulo-strati; cirro-strati.
15	971	38·1	36·2	1·9	0·0	0·0	20	— : 0 : —	7·0	Id.; id.
16	29·977	36·0	34·8	1·2	0·0	0·0			1·5	Cirro-strati.
17	30·000	35·5	34·6	0·9	0·0	0·0	20		2·0	Id.
18	019	34·0	33·0	1·0	0·0	0·0			1·0	Cirro-cumulous scud to E.
19	037	31·8	31·5	0·3	0·0	0·0			0·5	Cirro-strati on E. horizon.
20	052	36·2	34·9	1·3	0·0	0·0			1·5	Cirro-strati and cirrous haze on E. hor.; linear cirri.
21	066	40·0	37·7	2·3	0·0	0·0	17		0·2	Clear, except a sheet of faint cirro-strati to N.
22	067	44·6	41·5	3·1	0·0	0·0			0·0	Id.
23	095	48·1	43·9	4·2	0·5	0·4	20		1·0	Patches of scud to N. and W.; woolly cirri and cir. haze.
28 0	113	49·9	44·5	5·4	1·0	0·7	21	24 : — : 21	7·0	Patches of scud; woolly cirri and cir. haze lying SSW.
1	121	52·3	47·0	5·3	1·7	0·8	20		8·0	Id.; id. [to NNE.
2	119	52·9	48·0	4·9	0·7	0·5	20	— : — : 24	7·0	Id. woolly cirri, cirrous haze; cirro-strati.
3	109	52·7	46·6	6·1	0·8	0·2	19	20 : — : —	3·0	Scud; woolly cirri to E.
4	100	52·9	47·2	5·7	0·5	0·5	20	— : — : 20	7·0	Woolly cirri and cirrous haze; patches of scud.
5	111	52·3	46·0	6·3	0·4	0·2	19		7·0	Id.; id.
6	144	49·6	44·4	5·2	0·7	0·6	19	— : — : 24	2·0	Woolly and feathered cirri, radiating from N.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
28	7	30·116	45·7	40·9	4·8	1·9	0·9	19	— : — : 24	2·5	Woolly and feathered cirri, radiating from N.; cir.-str.
	8	155	43·3	39·9	3·4	2·9	0·6	19		1·0	Woolly cirri, rad. from NNW., having a bend towards
	9	165	41·9	39·0	2·9	1·1	0·0		— : — : 24	3·0	Id., causing a coloured lunar corona. [W. at NNW.
	10	171	41·8	39·0	2·8	0·2	0·0	20		7·0	As before; lunar halo.
	11	182	39·9	38·4	1·5	0·0	0·0			7·0	Woolly cirri, cirro-strati, and thin cir. haze; no halo.
	12	186	40·0	38·7	1·3	0·0	0·0		— : 24 : —	4·0	Cirro-cumuli and cirro-strati.
	13	30·206	42·0	40·3	1·7	0·0	0·0		21 : — : —	6·5	Loose scud, moving quickly; cirro-strati; small corona.
	14	216	44·0	42·8	1·2	0·1	0·0	21		7·0	Scud; a slight breath of wind 15m ago.
	15	209	45·0	43·7	1·3	0·1	0·0	19		10·0	Id.
	16	209	44·9	43·8	1·1	0·1	0·0			8·0	A few stars dimly visible through thin clouds.
	17	211	44·8	43·7	1·1	0·0	0·0			9·5	Id.
	18	215	45·5	44·2	1·3	0·2	0·2	20	22 : — : —	9·7	Scud; cir.-cum. and cir.-str.; clouds tinged with red to E.
	19	241	45·7	44·3	1·4	0·2	0·0	20	22 : — : —	10·0	Id., nearly homogeneous; cirrous haze, &c. to E.
	20	241	46·9	45·1	1·8	0·4	0·2	20	24 : — : —	10·0	Id.; haze to E., more broken than at last hour.
	21	235	47·9	46·0	1·9	0·5	0·0	23	22 : — : —	10·0	Id.; woolly cirro-cumuli to E.
	22	252	50·8	48·2	2·6	0·3	0·2		21 : 27 : 27	9·0	Thin scud; cirro-cumuli; woolly and mottled cirri.
	23	267	51·3	48·4	2·9	0·2	0·0	20	22 : 28 : 28	8·0	Id.; id.; id.
29	0	265	54·2	50·5	3·7	0·2	0·2	20	— : — : 26	5·0	Var. of cirri; patches of cir.-cum.; cir. haze on hor.
	1	259	56·5	52·3	4·2	0·3	0·2			8·0	Cir. haze over most of the sky; cir.-cum. and scud to N.
	2	261	56·0	51·3	4·7	0·6	0·3	20		3·0	Nearly as before.
	3	260	54·0	49·8	4·2	0·8	0·4	20		4·0	Id.; very thin cirri. [to E.
	4	254	54·1	49·8	4·3	0·5	0·2	21		4·0	Thin cirri over most of the sky; cir.-cum. to N.; foggy
	5	251	54·6	50·0	4·6	0·2	0·1	22		0·7	Patches of cirro-strati; thin woolly cirri and cir. haze.
	6	245	54·0	49·7	4·3	0·0	0·0	20		0·5	Id.; id.
	7	254	51·4	48·1	3·3	0·1	0·0			0·5	Id.; id.
	8	258	46·3	45·0	1·3	0·0	0·0			1·0	Id.; id.
	9	258	44·4	43·3	1·1	0·0	0·0			0·5	Patches of cirri; cirrous haze.
	10	258	41·4	40·8	0·6	0·0	0·0			0·0	Cirrous haze.
	11	257	39·3	38·9	0·4	0·0	0·0			0·2	Thin haze, causing col. lunar corona; very faint aurora.
	12	253	37·5	37·2	0·3	0·0	0·0			0·2	Thin cirri; aurora faintly visible, owing to moonlight.
	13	30·258	34·8	34·7	0·1	0·0	0·0			0·0	Clear.
	14	251	33·1	33·0	0·1	0·0	0·0			0·0	Id.
	15	242	34·3	34·0	0·3	0·0	0·0			0·0	Id.
	16	235	32·2	32·1	0·1	0·0	0·0			0·0	A few streaks of cirri; aurora very faint.
	17	232	29·9	29·5	0·4	0·0	0·0			0·5	Cirro-strati and haze on E. horizon.
	18	227	31·2	31·2	...	0·0	0·0			0·8	
	19	234	31·7	31·7	...	0·0	0·0			1·0	Linear cirri and cirrous haze; heavy hoar-frost.
	20	243	34·0	34·0	...	0·0	0·0			0·5	Thin cirrous haze over sky; portion of solar halo.
	21	245	37·0	36·8	0·2	0·0	0·0			1·0	Cirrous haze on hor.; woolly cirri and cir.-str. to NE.
	22	248	42·8	41·4	1·4	0·0	0·0			0·5	Thin cirri and haze.
	23	241	47·0	44·8	2·2	0·0	0·0	20		0·2	Wisps of cirri; fog and cirrous haze on horizon.
30	0	227	50·7	47·6	3·1	0·0	0·0			0·2	As before.
	1	219	55·0	50·4	4·6	0·0	0·0			0·2	Id.
	2	208	58·3	52·4	5·9	0·0	0·0			0·2	Fog and haze on horizon.
	3	188	60·0	53·3	6·7	0·0	0·0			0·2	Id.
	4	174	61·9	54·0	7·9	0·0	0·0			0·2	
	5	165	60·1	53·2	6·9	0·0	0·0			0·2	
	6	165	56·9	51·9	5·0	0·0	0·0			0·0	Thick and hazy.
	7	175	53·0	50·0	3·0	0·0	0·0			0·0	Id.
	8	225	49·2	46·0	3·2	0·0	0·0			0·0	
	9	199	46·6	44·4	2·2	0·0	0·0			0·5	Haze and fog; fine cirri; faint lunar corona.
	10	199	44·0	43·0	1·0	0·0	0·0			1·0	Fine cirri and haze; coloured lunar corona 3° diam.
	11	191	41·0	40·0	1·0	0·0	0·0			0·2	Haze, chiefly to N.; corona very faint.
	12	183	40·8	39·8	1·0	0·0	0·0			0·5	Patches of fine cirri; corona larger; less hazy to N.
	23½	30·096	...	...	...	0·3	...	16			

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1^h.	10^m.	From	Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
31	13	29·968	38·1	38·0	0·1	1·4	0·0			0·0	Slight haze on N. and E. horizon.
	14	959	37·4	37·3	0·1	0·0	0·0			0·0	Id.
	15	949	33·9	34·0	...	0·0	0·0			0·0	Id.
	16	952	33·8	33·7	0·1	0·0	0·0			0·0	Id.
	17	953	32·9	32·9	...	0·0	0·0			0·2	Cirrous haze on E. horizon.
	18	957	31·3	31·2	0·1	0·0	0·0			0·2	Increasing patches of clouds; cirrous haze; heavy dew.
	19	962	32·4	32·4	...	0·0	0·0			0·0	Hazy on horizon; slight fog; hoar-frost.
	20	965	35·2	35·0	...	0·0	0·0	20		0·0	Id.; id. id.
	21	957	39·8	39·2	0·6	0·0	0·0			0·0	Id.
	22	949	47·8	45·8	2·0	0·0	0·0	20	—:—:18	0·2	Thin cirri lying N. and S.; patches of cir.-str. to SE.
	23	943	54·2	49·5	4·7	0·1	0·3	19		0·2	Patches of scud and cirro-cumuli.
1	0	940	56·3	50·2	6·1	0·3	0·4	21	—:20:—	3·0	Cirro-stratous scud; cir.-str., cumuli, cum.-str. on hor.
	1	938	57·2	51·8	5·4	0·5	0·6	22	—:20:—	2·0	Id.; cumulo-strati and haze on hor.
	2	938	56·9	51·7	5·2	1·0	0·7	20	19:—:—	2·5	Scud and loose cumuli; fine cirri to W.
	3	924	56·1	50·7	5·4	2·1	0·9	20	19:—:—	2·5	Id.; woolly and linear cirri.
	4	919	55·0	49·8	5·2	1·3	0·6	21	21:—:—	5·0	Id.; id.
	5	923	53·7	49·3	4·4	1·0	0·5	20	22:—:20	3·0	Patches of scud; id.
	6	929	52·0	48·0	4·0	0·6	0·2	18	—:—:20	4·0	Cirri radiating from SSW.; masses of scud.
	7	920	48·0	45·8	2·2	0·5	0·1	21	22:—:—	3·0	Patches of scud; woolly and linear cirri.
	8	920	44·9	43·7	1·2	0·2	0·0		22:—:—	6·0	Scud; cirrous clouds.
	9	921	43·7	42·9	0·8	0·0	0·0		—:—:24	6·0	Woolly, diffuse, and linear cirri; scud to N.
	10	910	44·8	43·8	1·0	0·0	0·0			6·0	Id.
	11	887	42·5	42·0	0·5	0·0	0·0		—:20:—	4·0	Cirro-stratous scud; cirro-cumuli; haze to E. and NE.
	12	870	47·1	47·0	0·1	0·0	0·0		—:20:—	7·0	Id.; id.
	13	29·852	43·3	43·0	0·3	0·0	0·0		—:20:—	9·0	Cirro-stratous scud; haze.
	14	833	43·2	42·8	0·4	0·0	0·0		20:—:—	10·0	Thick scud.
	15	813	44·9	43·6	1·3	0·0	0·1	22		10·0	Id.
	16	788	44·8	43·3	1·5	1·0	0·8	18		10·0	Id.
	17	781	43·9	43·0	0·9	0·8	0·2	19		10·0	Id.
	18	756	44·4	43·4	1·0	0·4	0·4	19		10·0	Id.
	19	761	45·0	44·0	1·0	1·3	0·4	19	20:—:—	10·0	Scud.
	20	746	46·0	44·1	1·9	1·3	0·5	19	20:—:—	10·0	Id.
	21	723	46·8	44·4	2·4	1·5	1·0	19	20:—:—	10·0	Id.
	22	695	48·2	45·6	2·6	1·3	1·6	20	20:—:—	10·0	Id.
	23	668	51·0	47·1	3·9	2·8	1·5	19	20:—:—	10·0	Id.; cirro-cumuli and cirro-strati.
2	0	642	50·5	46·3	4·2	2·4	2·0	20	20:—:—	9·7	Scud moving rapidly; cirri and cirro-strati.
	1	599	54·0	49·0	5·0	3·9	4·2	20	20:22:—	9·7	Id.; cirro-strati.
	2	596	51·1	46·9	4·2	4·3	2·4	21	20:—:—	10·0	Scud; cirro-strati and cirrous haze.
	3	565	51·9	47·4	4·5	3·4	3·4	20	20:—:—	10·0	Id.; dark stormy looking cirro-strati to SE.
	4	572	49·0	46·0	3·0	3·9	2·4	19	20:—:—	10·0	Id.; cirro-strati.
	5	554	48·0	46·0	2·0	1·8	1·0	19	20:—:—	10·0	Id.; id.; very light rain.
	6	531	47·6	46·0	1·6	1·7	1·2	18	19:—:—	10·0	Id.; very light rain.
	7	511	46·8	45·6	1·2	2·0	1·5	18	19:—:—	10·0	Id.
	8	493	46·4	45·1	1·3	1·6	0·7	18		10·0	Id.
	9	470	46·5	45·3	1·2	1·2	0·4	19		10·0	Id.
	10	459	46·1	45·1	1·0	0·5	0·3	19		10·0	Id.
	11	448	45·5	45·2	0·3	0·3	0·3	18		10·0	Id.; light rain.
	12	445	45·7	45·3	0·4	0·6	0·3	18		10·0	Id.; id.
	13	29·432	45·5	45·1	0·4	0·5	0·1	18		10·0	Scud; moderate rain.
	14	421	45·3	45·0	0·3	0·5	0·2	18		10·0	Id.; light rain.
	15	415	44·9	44·3	0·6	0·2	0·1	19		10·0	Id.; moderate rain.
	16	412	43·6	43·0	0·6	0·0	0·0			10·0	Id.; light rain.
	17	407	42·9	42·5	0·4	0·0	0·0			10·0	Id.; id.
	18	413	42·8	42·1	0·7	0·0	0·0		24:—:—	10·0	Id.; id.
	19	423	42·8	42·2	0·6	0·0	0·0			10·0	Homogeneous mass of clouds. [cumuli.
	20	431	43·1	42·6	0·5	0·0	0·0			10·0	Uniform mass of scud and cir.-str.; patches of scud and

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
2	21	29·441	45·0	43·8	1·2	0·1	0·1	22	22 : — : —	10·0	Patches of loose scud; dense cirro-strati.
	22	440	47·3	44·9	2·4	0·1	0·2	20		10·0	Loose scud; id.
	23	442	48·0	45·3	2·7	0·3	0·2	21	21 : — : —	10·0	Scud.
3	0	450	48·6	45·1	3·5	0·2	0·2	20	22 : — : —	10·0	Id.
	1	454	50·4	46·3	4·1	0·3	0·0	18	20 : — : —	10·0	Id.
	2	449	50·1	45·6	4·5	0·2	0·3	20	21 : — : —	10·0	Id.; ranges of cumuli.
	3	449	49·6	45·3	4·3	0·7	0·4	19	20 : — : —	10·0	Id.
	4	443	48·2	44·2	4·0	0·8	0·3	19	19 : — : —	10·0	Id.; loose cumuli.
	5	461	47·2	43·9	3·3	0·7	0·4	19	20 : — : —	10·0	Id.
	6	458	45·7	42·4	3·3	0·6	0·5	19	20 : — : —	10·0	Id.; nearly homogeneous mass of clouds.
	7	464	44·0	41·2	2·8	0·6	0·3	20		10·0	Patches of scud; cir.-str. waved and distorted to E.
	8	476	43·0	40·2	2·8	0·5	0·2	20		10·0	Cirro-strati radiated from S.
	9	473	41·9	39·9	2·0	0·1	0·0	20		10·0	Id.
	10	472	41·7	39·7	2·0	0·0	0·0			10·0	Id.
	11	477	41·0	39·2	1·8	0·0	0·0			10·0	Dense cirrous mass.
	12	475	40·6	39·1	1·5	0·0	0·0			10·0	Id.
	13	29·472	39·7	38·7	1·0	0·0	0·0			10·0	Dense cirrous mass; Moon occasionally visible.
	14	457	39·2	38·2	1·0	0·0	0·0			10·0	Dense mass of clouds.
	15	453	39·0	38·1	0·9	0·0	0·0			10·0	Id.; slight shower.
	16	438	39·1	38·6	0·5	0·0	0·0			10·0	Id.
	17	452	37·6	37·4	0·2	0·0	0·0			10·0	Id.; light rain since 16h.
	18	443	36·1	35·9	0·2	0·0	0·0			10·0	Light drizzle.
	19	448	36·6	36·1	0·5	0·0	0·0			10·0	Uniform mass of clouds; light drizzle.
	20	436	37·2	36·4	0·8	0·0	0·0	8		10·0	Id.; light fall of snow and hail.
	21	428	38·2	37·7	0·5	0·0	0·0	11		10·0	Id.; loose scud to SE. and N.
	22	422	40·2	38·8	1·4	0·0	0·0		6 : — : —	10·0	Scud.
	23	413	40·7	38·8	1·9	0·0	0·0	7		10·0	Id.
4	0	402	42·4	40·5	1·9	0·0	0·0		7 : — : —	10·0	Scud moving slowly.
	1	399	44·1	41·9	2·2	0·0	0·0	4		10·0	Scud.
	2	404	45·2	42·9	2·3	0·0	0·0	20		10·0	
	3	412	47·0	44·3	2·7	0·0	0·0	16		10·0	Dense clouds.
	4	406	47·0	44·2	2·8	0·0	0·0			10·0	
	5	411	46·3	44·0	2·3	0·0	0·0		17 : — : —	10·0	Thick scud; cirrous clouds seen above. [horizon.
	6	395	45·0	43·0	2·0	0·0	0·0		— : — : 16	9·9	Var. of cirri lying in bands from S. to N.; scud near
	7	407	43·6	42·3	1·3	0·0	0·0		— : 16 : —	9·8	Cir.-str. and cirrous clouds; patches of scud.
	8	416	41·7	41·0	0·7	0·0	0·0			10·0	Cirro-strati; thin cirrous clouds and haze.
	9	433	40·0	39·8	0·2	0·0	0·0			8·0	Scud and cirrous clouds.
	10	430	37·4	37·2	0·2	0·0	0·0			0·5	Stars indistinct owing to haze.
	11	433	37·2	37·2	...	0·0	0·0			1·0	Very hazy on hor.; fog on the ground; lunar halo.
	12	437	36·0	35·9	0·1	0·0	0·0			8·0	Scud and haze.
	13	29·433	36·3	36·2	0·1	0·0	0·0			10·0	Scud and haze.
	14	424	36·2	36·1	0·1	0·0	0·0		24 : — : —	10·0	Scud; thick fog.
	15	432	35·8	35·6	0·2	0·0	0·0			10·0	Id.; id.
	16	433	35·7	35·5	0·2	0·0	0·0			10·0	Id.; id.
	17	422	35·7	35·6	0·1	0·0	0·0			10·0	Id.; id.
	18	419	34·5	34·3	0·2	0·0	0·0			10·0	Id.; id.
	19	423	34·3	34·3	...	0·0	0·0		— : 15 : —	8·5	Cirro-cumulo-strati; stratus; heavy dew.
	20	421	37·0	36·7	0·3	0·0	0·0			10·0	Thick and very damp fog.
	21	426	37·9	37·8	0·1	0·0	0·0		— : 16 : —	10·0	Fog; cirrous clouds.
	22	424	41·9	41·1	0·8	0·0	0·0		— : 16 : —	10·0	Thick cirro-strati and cirrous haze; fog almost gone.
	23	412	50·0	47·3	2·7	0·0	0·0			10·0	Dense mass of cirro-strati and haze; solar halo lately.
5	0	425	52·0	47·3	4·7	0·0	0·0	16	16 : — : —	10·0	Masses of scud; dense cirro-strati; snow on Cheviot.
	1	418	51·9	46·8	5·1	0·4	0·2	17	16 : — : —	10·0	Id.; id., hanging as if dripping.
	2	421	51·6	47·0	4·6	0·3	0·2	17	16 : — : —	10·0	Thick heavy scud; dense cirro-strati; drops of rain.
	3	449	45·3	42·6	2·7	1·3	1·2	19	18 : 18 : —	10·0	Patches of scud; dense semifluid cir.-str.; heavy shower.
	4	476	42·3	40·9	1·4	1·5	0·0	20		10·0	Homogeneous; light rain since 3h.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

April 3d 20h. The snow consists of small sharp-pointed six-rayed stars; the hail formed upon these and flat.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
5 5	29·481	42·1	40·0	2·1	0·0	0·0	20	18 : 14 : —	9·7	Patches of scud; dense cirro-strati.
6	502	42·8	40·8	2·0	0·0	0·0		22 : 15 : —	8·0	Id.; cirro-strati and cirrous clouds.
7	520	40·5	39·0	1·5	0·0	0·0		— : — : 14	3·0	Varieties of cirri lying SSW. to NNE.; cir.-str.; scud.
8	550	38·2	37·2	1·0	0·0	0·0			0·7	Linear cirri and cir.-str.; mass of scud to E.
9	567	34·8	34·5	0·3	0·0	0·0			0·5	Cirro-strati on E. horizon.
10	590	32·9	32·8	0·1	0·0	0·0			0·9	Haze on E. horizon.
11	626	31·2	30·9	0·3	0·0	0·0			0·2	Streak of cloud on E., and patch on W., horizon.
12	640	29·0	28·9	0·1	0·0	0·0			0·2	As before; aurora.
13	29·659	29·7	29·9	...	0·0	0·0			0·2	Cirro-strati and fog to S.; aurora.
14	670	28·9	29·9	...	0·0	0·0		20 : — : —	0·5	Loose cumuli to S.
15	690	29·2	29·8	...	0·0	0·0		22 : — : —	0·2	Scud.
16	708	29·2	...	...	0·0	0·0		20 : — : —	1·5	Cirro-stratous scud.
17	718	30·2	30·1	0·1	0·0	0·0		14 : — : —	0·3	Scud; cirri, tinged with red; hoar-frost.
18	743	26·3	26·5	...	0·0	0·0	18	14 : — : —	1·0	Patches of scud; scud on horizon; red to E.
19	769	30·3	30·3	...	0·0	0·0	22		0·2	Cirro-strati, cumuli, and patches of scud; haze to E.
20	788	32·8	32·4	0·4	0·0	0·0			0·5	Cirrous haze, cirro-cumuli, and patches of scud.
21	811	35·5	34·4	1·1	0·0	0·0			0·2	Patches of cirro-strati.
22	815	40·0	38·4	1·6	0·0	0·0			0·9	Cumuli in haze on E. horizon.
23	830	45·1	42·4	2·7	0·1	0·0		12 : — : —	1·0	Cirro-stratous scud; cum. and haze to NE.; cir.-cum.
6 0	837	47·5	44·0	3·5	0·2	0·0	4		1·0	Cumuli and cirro-cumuli to S. and E.
1	843	49·5	45·1	4·4	0·4	0·3	4		1·0	Scud and loose cumuli; haze on E. horizon.
2	851	50·0	44·6	5·4	0·5	0·3	6		1·5	Woolly cirri, cirro-strati, cumuli, scud; haze on E. hor.
3	855	50·0	43·7	6·3	0·3	0·5	5	14 : — : —	4·0	Cirro-cumulo-strati; cirro-strati.
4	858	49·0	43·3	5·7	0·4	0·3	6		9·0	Id.; id.
5	868	46·9	43·1	3·8	0·4	0·2	6		9·9	Thick cirro-stratous scud, cirro-cumuli, cirro-strati.
6	880	46·7	44·0	2·7	0·1	0·1	6	2 : 14 : —	9·0	Patches of scud; hazy cirro-strati; mottled cirri, &c.
7	882	45·8	43·7	2·1	0·2	0·1	6	6 : 14 : —	8·7	Loose scud; cirro-stratous scud; woolly cirri.
8	897	43·9	42·8	1·1	0·1	0·0	4	5 : — : —	10·0	Scud.
9	911	43·8	42·8	1·0	0·0	0·0		5 : — : —	9·7	Id.; sky to NW.
10	910	43·2	42·5	0·7	0·0	0·0			9·5	Cirrous clouds.
11	919	43·1	42·1	1·0	0·0	0·0			10·0	Id.
12	914	42·2	41·8	0·4	0·0	0·0			10·0	Dark.
23	29·948	...	...	...	0·2	...	14			
7 13	29·983	43·2	41·1	2·1	0·0	0·0			4·0	Sky covered with haze; stars dim.
14	987	43·9	41·6	2·3	0·0	0·0			3·0	Id.
15	995	41·9	40·3	1·6	0·0	0·0			3·0	Id.
16	998	40 0	38·9	1·1	0·0	0·0			2·0	Clear in zenith; lunar halo.
17	29·998	42·4	41·3	1·1	0·7	0·3	21		6·0	Cirrous haze and patches of scud.
18	30·017	44·1	43·0	1·1	0·6	0·3		20 : — : —	10·0	Scud.
19	036	45·6	44·2	1·4	0·3	0·3	23	22 : — : —	10·0	Thick scud, nearly homogeneous.
20	051	46·2	45·0	1·2	0·5	0·4	20	21 : — : —	10·0	Loose scud.
21	068	48·3	46·7	1·6	1·1	0·6	20	20 : — : —	10·0	Misty loose scud.
22	074	51·0	48·3	2·7	0·9	0·9	19	21 : — : —	9·9	Scud; cirro-strati.
23	088	51·2	48·2	3·0	0·7	0·3	20	21 : — : —	10·0	Id.; id.
8 0	092	54·3	50·6	3·7	1·5	0·9	20	21 : — : —	10·0	Id.; id.
1	079	53·7	50·0	3·7	2·0	0·5		22 : 25 : 28	8·5	Thin scud; cirro-stratous scud; woolly cirri.
2	089	54·4	50·3	4·1	1·4	1·8	21	— : 26 : —	8·0	Cirro-stratous scud and cirro-strati; scud and cumuli.
3	092	55·7	51·4	4·3	1·3	0·6	21	22 : 28 : 28	8·0	Loose scud; cirro-strati and cirri.
4	110	55·6	51·3	4·3	0·8	0·5	22	22 : — : —	8·0	Id.; patches of woolly cirri; cirro-strati.
5	112	54·9	51·0	3·9	1·2	0·4	20	22 : — : —	8·0	Id.; woolly cirri.
6	122	52·7	50·2	2·5	0·8	0·1	19	22 : — : —	9·0	Scud; cirro-strati and cirrous clouds.
7	130	50·9	49·1	1·8	0·4	0·1	20	24 : — : —	9·0	Id.; id.
8	134	48·0	47·0	1·0	0·2	0·1	20	22 : — : —	3·0	Thin misty scud; patches of curled cirri.
9	152	48·6	47·4	1·2	0·2	0·2	19		10·0	
10	148	48·5	47·4	1·1	0·2	0·1	19		10·0	

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
8	11	30·152	47·7	46·8	0·9	0·2	0·1	18		6·0	Cirrous clouds and scud; stars rather dim.
	12	146	46·0	45·8	0·2	0·4	0·3	18		0·7	Thin scud near horizon, chiefly to N.
	13	30·150	47·0	46·7	0·3	0·3	0·0	18		2·0	Thin scud passing zenith.
	14	153	48·7	47·9	0·8	0·5	0·2	22		10·0	Scud.
	15	146	48·7	47·9	0·8	0·0	0·0	19	24 : — : —	9·0	Thin scud.
	16	139	49·1	47·9	1·2	0·1	0·0		24 : — : —	9·7	Id.
	17	141	49·4	48·3	1·1	0·2	0·1	22		9·7	Id.
	18	158	48·8	48·0	0·8	0·2	0·0	18		10·0	Id.
	19	161	49·2	48·3	0·9	0·0	0·0		22 : — : —	10·0	Scud; shower to ESE.
	20	170	49·9	48·8	1·1	0·1	0·0	23	22 : — : —	10·0	Id.
	21	173	52·0	50·0	2·0	0·3	0·6	22	21 : — : —	10·0	Id.
	22	170	53·5	51·1	2·4	0·3	1·0	24	21 : — : —	10·0	Id.
	23	176	55·2	52·2	3·0	1·2	0·6	19	24 : — : —	10·0	Id.; cirri; cirro-strati; woolly cirri to SE.
9	0	187	56·3	53·0	3·3	0·9	0·1	21	23 : — : —	10·0	Id.; cirrous clouds.
	1	177	59·0	55·0	4·0	0·3	0·6	19	23 : — : —	8·0	Loose cumuli and scud; woolly cirri, cirro-strati.
	2	176	57·5	54·0	3·5	1·3	0·4	21		9·5	Id.; id.
	3	173	60·1	55·1	5·0	0·4	0·3	21	— : — : 23	8·0	Cumuli, cumulo-strati, cirro-strati; woolly cirri.
	4	170	59·4	54·7	4·7	0·5	0·5	20	— : 23 : —	9·0	Woolly cirro-cumuli; linear cirri and cirro-strati.
	5	175	54·4	52·7	1·7	0·5	0·1	21	— : 24 : —	9·7	Cir.-str. scud; cirro-strati; cumuli; patches of scud.
	6	169	55·0	52·6	2·4	0·3	0·3	20	21 : 22 : —	9·0	Scud; cirro-cumulo-strati.
	7	174	53·3	51·5	1·8	0·3	0·2	20	20 : 22 : —	9·0	Thin misty scud; scud and cirro-cumulo-strati.
	8	185	51·1	49·9	1·2	0·3	0·1	20		10·0	Thin misty scud over the sky.
	9	192	50·3	49·1	1·2	0·0	0·0	20		9·0	Thin misty scud; cirrous clouds.
	10	194	50·1	49·1	1·0	0·7	0·0	20		10·0	Scud; very dark; slight drizzle of rain.
	11	185	49·9	48·8	1·1	0·5	0·1	20		10·0	Id.; id.
	12	180	49·7	48·4	1·3	0·3	0·1	22		10·0	Id.; id.
	13	30·171	49·6	48·0	1·6	0·1	0·0	20		9·5	A few stars visible to SE.
	14	165	49·5	47·7	1·8	0·1	0·1	25		9·5	Sky to S.
	15	150	46·9	45·0	1·9	0·3	0·4	21		0·5	Sky pretty clear; cirro-strati on horizon.
	16	144	45·1	43·3	1·8	0·6	0·2	25		0·2	Id.; id.
	17	131	44·3	41·1	3·2	0·6	0·2	20		0·5	Cirro-strati, cirri, and cirrous haze on horizon.
	18	138	41·9	39·2	2·7	0·1	0·0			0·2	Id.
	19	131	43·0	39·9	3·1	0·2	0·1	20		0·1	Id.
	20	116	44·4	41·5	2·9	0·2	0·1	20		0·2	Id.
	21	106	46·3	43·6	2·7	0·5	0·2	19		0·3	Cirro-strati to NW.; haze on horizon.
	22	090	48·7	45·0	3·7	0·2	0·2	18		0·3	Id., id.
	23	078	50·2	47·4	2·8	0·2	0·2	19		0·3	Cirro-cumuli, cirro-strati; patches of thin scud.
10	0	047	53·2	51·5	1·7	0·7	0·9	18		0·2	Cirro-cumuli and cirro-strati; haze on horizon.
	1	032	55·3	47·5	7·8	0·7	0·2	21		0·2	Woolly cirri to NW.; hazy on horizon.
	2	30·003	57·1	48·2	8·9	0·3	0·7	19		0·3	Id.; id.
	3	29·956	57·6	48·6	9·0	0·9	0·5	20		0·3	Id.; id.
	4	936	58·1	49·2	8·9	1·0	1·1	20		0·5	Id.; id.
	5	913	56·9	46·3	10·6	1·8	0·8	20	— : — : 20	1·5	Id.; id.
	6	894	53·0	43·2	9·8	0·6	0·3	20	— : — : 22	3·0	Woolly cirri and cir.-str.; thick cirrous haze on E. hor.
	7	878	50·1	43·0	7·1	0·7	0·2	21	— : — : 20	2·0	Id.; id.
	8	851	44·9	39·7	5·2	0·4	0·0	20		0·5	Woolly cirri to NW.
	9	824	42·4	37·7	4·7	0·4	0·3	18		0·5	Cirri and cirro-strati to NW.
	10	799	41·8	37·5	4·3	0·6	0·3	19		0·2	Streaks of cirro-strati to N.
	11	777	42·6	37·8	4·8	0·5	0·3	20		0·9	Id.
	12	750	37·1	34·7	2·4	0·4	0·0			0·9	Id.
	13	29·713	41·0	36·2	3·8	0·1	0·0			0·9	Streaks of cirro-strati to N.; lighter on N. horizon.
	14	675	39·1	34·5	4·6	0·1	0·0			0·9	Id.
	15	639	41·3	35·2	6·1	0·3	0·0			0·2	Patches of scud; flash of lightning seen to SE.
	16	611	41·3	37·3	4·0	0·0	0·5	19		10·0	Scud; a few drops of rain.
	17	582	43·3	41·3	2·0	0·7	0·8	19	20 : — : —	9·9	Id.; cirro-strati to E., tinged with red; light rain.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0–10.	
10	18	29·574	43·1	42·1	1·3	0·7	0·2	19	21 : — : —	9·9	Scud ; cirro-strati to E., tinged with red ; light rain.
	19	561	43·2	41·0	2·2	0·2	0·5	19	22 : — : —	2·0	Loose ragged scud and cum. to E. ; cir.-str. lying SSW.
	20	575	44·4	41·7	2·7	0·9	0·5	19	21 : — : —	3·0	Scud ; cum. on SE. hor. ; cir.-str. to E. [to NNE.
	21	571	46·6	43·0	3·6	1·6	1·9	18	21 : — : —	9·0	Id. ; cirrous haze to E. ; wind in gusts.
	22	572	47·9	43·3	4·6	1·2	2·0	20	21 : 23 : 19	7·0	Id., two currents ; cirri ; drops of rain.
	23	568	51·6	46·9	4·7	2·9	1·6	20	22 : — : —	9·7	Id. ; cirri and cirro-strati.
11	0	562	51·1	46·2	4·9	3·0	1·8	20	22 : 24 : 20	9·5	Thick scud ; cirro-stratous scud ; cirri ; rain to NW.
	1	554	50·1	45·4	4·7	1·7	1·3	20	21 : — : —	6·0	Scud and loose cumuli ; passing showers.
	2	561	52·0	46·0	6·0	1·3	0·5	21	24 : — : —	7·0	Id.
	3	553	54·7	45·9	8·8	1·5	0·8	23	24 : — : —	4·0	Cumuli.
	4	560	54·1	45·1	9·0	2·3	0·7	24	25 : — : —	3·0	Id. ; cirrus to W. [to E.
	5	576	53·2	44·0	9·2	2·0	0·8	24	25 : — : —	2·0	Cumuli ; patches of woolly cirrus to SE. ; cirrous haze
	6	582	49·5	43·3	6·2	1·3	1·0	25	24 : — : —	3·0	Cumuli and cir.-str. scud ; woolly cirri ; cirrous haze.
	7	608	46·8	40·5	6·3	1·0	0·2	24	24 : — : —	1·0	Cirro-stratous scud ; cumuli and cumulo-strati on hor.
	8	621	43·6	38·7	4·9	1·0	0·1	20	25 : — : —	0·5	Scud ; hazy round horizon.
	9	638	42·4	38·3	4·1	0·2	0·0			0·1	Patches of scud to S. ; haze on N. and E. horizon.
	10	635	39·2	36·8	2·4	0·0	0·0			0·0	Clear.
	11	615	40·4	37·3	3·1	0·0	0·0	24		0·1	Streak of cirrus to S.
	12	616	39·3	36·9	2·4	0·1	0·1	20		0·5	Scud to S. ; clear.
	13	29·643	42·2	39·1	3·1	0·2	0·1	20		4·0	Scud and cirrous clouds ; stars dim.
	14	638	41·4	38·7	2·7	0·4	0·1	21		0·7	Id.*
	15	632	38·2	36·8	1·4	0·2	0·1	19	22 : — : —	2·0	Scud.
	16	627	39·6	38·0	1·6	0·2	0·1	19		1·2	Id. [NNW to SSE.
	17	611	39·0	37·3	1·7	0·3	0·0	20	24 : — : —	3·5	Id. ; mottled and linear cirri lying in bands from
	18	609	40·0	38·4	1·6	0·2	0·1		24 : — : —	9·0	Id. ; id.
	19	609	41·9	39·5	2·4	0·4	0·1	19	— : 25 : 21	7·0	Cirro-stratous scud ; cirri ; cirro-strati to E. and SE.
	20	603	42·3	40·0	2·3	0·2	0·1	20	— : — : 28	9·0	Cirri lying NNW. to SSE. ; cumuli, cum.-str. ; scud.
	21	578	45·0	42·0	3·0	0·4	0·8	20	20 : — : —	7·0	Masses of scud ; cirri, cirrous haze ; solar halo.
	22	560	47·9	42·6	5·3	1·4	0·8	20	22 : — : —	7·0	Scud ; linear cirri.
	23	531	50·3	45·1	5·2	1·3	0·8	20	21 : — : —	9·9	Id. ; cumuli on E. horizon ; linear cirri to E.
12	0	503	49·2	46·0	3·2	1·4	1·1	17	21 : — : —	10·0	Id. ; dense cirro-strati ; a few drops of rain.
	1	492	46·0	43·0	3·0	2·5	1·3	19	18 : — : —	10·0	Id. ; cirrous clouds ; light rain.
	2	452	46·1	43·0	3·1	1·9	0·5	19	19 : — : —	10·0	Id.
	3	416	47·6	44·5	3·1	1·4	0·6	19	19 : — : —	10·0	Id.
	4	384	49·0	46·1	2·9	0·9	1·0	20	20 : — : —	10·0	Id. ; a few drops of rain.
	5	360	47·9	46·1	1·8	0·9	0·5			10·0	Id. ; light drizzle.
	6	312	46·8	46·2	0·6	0·5	0·1	18	20 : — : —	10·0	Id.
	7	326	47·8	46·4	1·4	0·2	0·1	18	19 : 20 : —	9·7	Id., two currents ; cirri.
	8	317	47·1	45·8	1·3	0·0	0·0	18		9·7	Id.
	9	320	46·2	45·1	1·1	0·0	0·0			10·0	Id.
	10	315	41·4	41·0	0·4	0·0	0·0			3·5	Id.
	11	298	42·0	41·9	0·1	0·0	0·0			3·0	Id. ; cirrous clouds.
	12	301	42·3	41·9	0·4	0·0	0·0			8·0	Id. ; id.
	13	29·310	42·9	42·6	0·3	0·0	0·0			10·0	
	14	313	44·3	43·4	0·9	0·0	0·0			10·0	
	15	320	44·4	43·0	1·4	0·0	0·0			7·0	Thin clouds ; stars dim.
	16	323	44·2	42·6	1·6	0·0	0·0			3·0	Scud to E. ; thin scud to S. and W.
	17	322	42·0	41·0	1·0	0·0	0·0		— : 24 : —	1·0	Masses of cirro-stratous scud and cirro-strati.
	18	335	43·6	41·9	1·7	0·2	0·0	21		1·0	Masses of scud and cirro-strati.
	19	352	45·3	43·0	2·3	0·1	0·0	21	24 : 24 : —	2·5	Thin scud ; cirro-stratous scud.
	20	360	48·0	45·0	3·0	0·0	0·1	21	25 : — : —	9·0	Id. ; fine cirri ; very light drizzle.
	21	368	50·9	46·9	4·0	0·2	0·2	21	25 : — : —	9·5	Id. ; woolly cirri ; scud very dense to W.
	22	377	51·6	45·4	6·2	0·6	0·4			8·0	Id.
	23	374	54·3	47·9	6·4	0·6	0·3	19	24 : — : —	8·0	Id. ; id. ; cumuli, cumulo-strati.
13	0	374	54·5	47·2	7·3	0·5	0·4	27	25 : — : —	8·0	Scud ; woolly cirri ; loose cumuli.
	1	378	54·4	47·2	7·2	1·1	0·3	22		9·0	Id. ; id. ; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

* See additional meteorological notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
13 2	29·384	55·9	48·6	7·3	1·1	0·3	21	24 : 25 : —	7·5	Scud, two currents; linear cirri, cirrous haze; showers.
3	378	56·8	48·3	8·5	1·2	0·8	21	24 : — : —	8·5	Id.; woolly cirri; cumuli; showers to N.
4	377	55·2	48·1	7·1	1·4	1·3	20	24 : — : —	9·0	Id., cumuli, cum.-str., nimbi; cirrous haze; showers.
5	358	53·5	48·1	5·4	1·9	1·0	20	24 : — : —	10·0	Id.; dense hazy cirrous mass; solar halo.
6	362	52·0	46·0	6·0	0·8	0·9	20	24 : — : —	10·0	Masses of scud; dense cirro-strati.
7	371	50·0	45·3	4·7	0·8	0·3	23	24 : — : —	10·0	Id.; id.; drops of rain.
8	371	46·6	44·0	2·6	0·8	0·0	21		10·0	Dense mass of cirro-strati; light shower.
9	371	46·0	43·7	2·3	0·0	0·0			9·8	Scud and cirro-strati; sky to W.
10	368	45·9	43·6	2·3	0·2	0·0			10·0	Dark.
11	361	45·9	43·3	2·6	0·3	0·1			10·0	Id.
12	371	45·8	43·0	2·8	0·3	0·1	21		9·0	Sky to N. and E.
23½	29·568	...	...	...	1·2	...	25			
14 13	29·639	49·0	48·5	0·5	0·0	0·0			10·0	Dark; slight rain.
14	641	50·7	49·5	1·2	0·4	0·3	20		10·0	Id.; rain ceased after 13h; wind rose at 13h 45m.
15	632	50·3	48·9	1·4	0·5	0·2	20		10·0	Id.
16	636	49·6	48·1	1·5	0·2	0·1	20		10·0	Clouds a little broken.
17	629	49·0	47·8	1·2	0·2	0·1	20	20 : — : —	9·5	Scud moving rather quickly; cirrous clouds.
18	636	49·1	48·1	1·0	0·5	0·1	18	20 : — : —	9·7	Scud; cirro-strati and other cirrous clouds; light rain.
19	634	49·2	48·0	1·2	0·3	0·1	19	20 : — : —	10·0	Thick smoky scud.
20	634	49·9	47·8	2·1	0·6	0·2	18	20 : — : —	10·0	Id.
21	627	51·0	48·2	2·8	1·0	0·5	19	20 : — : —	10·0	Id.
22	619	53·4	49·1	4·3	2·2	3·1	19	21 : — : —	9·0	Scud; woolly cirri.
23	617	53·9	49·5	4·4	3·2	2·2	20	21 : — : —	9·0	Id.; id.; cirro-strati.
15 0	597	54·8	50·0	4·8	2·3	2·3	19	20 : — : —	9·5	Id.; cirri and cirro-strati to S.; loose cumuli to E.
1	602	54·2	49·4	4·8	4·0	2·6	19		9·0	Id.; id.
2	604	55·9	52·1	3·8	2·9	1·6	19	20 : — : —	10·0	Id.; cirrous clouds; very light rain.
3	612	52·3	49·6	2·7	2·6	1·4	19	20 : — : —	10·0	Id.; cirro-strati.
4	621	52·3	49·7	2·6	2·0	0·6	18	19 : — : —	10·0	Id.; a few drops of rain.
5	637	51·1	48·2	2·9	1·1	0·1	20	21 : — : —	9·5	Id.; woolly cirri; light shower since 4h; rain to E.
6	655	53·1	48·1	5·0	0·2	0·2	22	22 : — : 20	9·5	Id.; id.; cir.-str., cum.-str. to E.; thundery-looking to SW.
7	676	51·1	45·3	5·8	0·2	0·0	22	25 : 20 : 20	9·5	Thin scud; cir.-str. scud; wo. cirri; scud gone off to SE.
8	716	49·3	45·1	4·2	0·0	0·0			9·5	As before.
9	733	47·7	43·2	4·5	0·0	0·0			9·5	Id.
10	755	45·6	42·6	3·0	0·0	0·0			9·7	Scud and cirrous clouds.
11	756	43·6	40·8	2·8	0·0	0·0			8·0	Id.
12	773	41·7	40·1	1·6	0·0	0·0			8·0	Id.
13	29·792	40·7	38·1	2·6	0·0	0·0			2·0	Stars dim.
14	803	36·1	35·6	0·5	0·0	0·0			2·0	Id.
15	817	34·9	34·7	0·2	0·0	0·0			0·5	Id.
16	820	33·6	33·0	0·6	0·0	0·0			0·5	Clear; cirro-strati to E.
17	827	34·5	33·7	0·8	0·0	0·0	20		0·2	Id.; id.
18	842	32·9	32·0	0·9	0·0	0·0			0·2	Cirrous haze on E. hor.; cir.-str. to W.; hoar frost.
19	857	37·2	35·7	1·5	0·0	0·0	20	— : — : 28	3·0	Woolly and linear cirri.
20	866	43·6	40·5	3·1	0·0	0·0	18	— : — : 28	4·0	Id.
21	866	46·5	42·9	3·6	0·5	0·3	20		4·0	Id.
22	881	50·1	45·0	5·1	0·7	0·8	20	22 : — : 28	5·0	Scud; linear cirri and cirrous haze.
23	881	52·1	46·1	6·0	1·2	1·0	21		5·0	Scud and loose cum. to S. and E.; cirri and cir. haze.
16 0	886	52·6	46·1	6·5	1·7	0·9	19	21 : — : 3	6·0	Cir.-str. scud; cirrous haze; cir.-str.; loose cumuli.
1	889	53·7	46·6	7·1	1·8	2·0	19	20 : 25 : —	8·0	Scud; cirro-strati and cymoid cirri; varieties of cirri.
2	883	54·5	47·1	7·4	1·6	1·3	19	— : 25 : —	8·0	Cir.-cum.-str., cir.-str.; scud; cirri; very wild looking.
3	876	53·0	46·0	7·0	3·1	2·2	19	— : 24 : —	8·0	Cir.-cum.-str.; cir.-str.; haze; patches of scud to E.
4	894	52·7	45·3	7·4	2·3	1·8	19		9·5	Thick mass of cir.-str. and cir. clouds; sky to E.
5	889	51·0	43·8	7·2	1·5	1·1	19		9·2	Id.; sky to E. and SW.
6	900	50·0	43·6	6·4	1·6	1·5	19	— : 24 : —	9·5	Cirro-strati and cirro-stratous scud.
7	905	48·2	42·2	6·0	0·6	0·3	18	— : 24 : —	9·5	Dark heavy cirro-strati.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
16	8	29·896	47·4	41·3	6·1	0·8	0·5	18	— : 24 : —	9·0	Thick semifluid cirro-stratous scud ; cirro-strati.
	9	926	46·6	41·0	5·6	0·5	0·2	20	— : 22 : —	8·5	Cirro-cumulo-strati ; cirro-strati.
	10	927	44·0	40·9	3·1	0·1	0·0	18		6·0	Scud.
	11	923	45·2	41·9	3·3	0·2	0·4	18		5·0	Id.
	12	941	43·7	41·1	2·6	0·1	0·0			9·0	Id. ; sky to E.
	13	29·935	42·9	41·0	1·9	0·0	0·0			4·0	Scud ; sky to E.
	14	934	43·0	42·2	0·8	0·0	0·0			10·0	Id. ; lightest to S.
	15	928	44·8	42·9	1·9	0·0	0·0			10·0	Id. ; very dark.
	16	928	45·2	43·2	2·0	0·2	0·2	18		10·0	Id. ; id.
	17	916	45·2	43·0	2·2	0·1	0·0			9·9	Band of red-tinged sky to SE.
	18	917	46·0	44·0	2·0	0·0	0·0		20 : — : —	10·0	Scud.
	19	919	46·0	44·0	2·0	0·0	0·0			10·0	Id., nearly uniform covering.
	20	929	46·6	44·6	2·0	0·3	0·3	18	20 : — : —	10·0	Id.
	21	926	48·7	46·0	2·7	0·3	0·1	19		10·0	Misty scud.
	22	911	52·2	48·3	3·9	0·3	0·2	19	19 : — : —	9·9	Id.
	23	901	53·7	49·0	4·7	0·7	0·4	20	20 : — : —	9·5	Scud ; cirrous clouds.
17	0	885	56·0	50·1	5·9	0·5	0·3	20	20 : — : —	8·0	Scud and loose cumuli ; cirri.
	1	870	55·8	50·0	5·8	0·9	0·7		18 : — : —	5·0	Id. ; woolly and linear cirri.
	2	863	54·7	49·0	5·7	0·9	0·3	19	18 : — : —	4·0	Id. ; cirrous haze on horizon.
	3	827	57·9	51·3	6·6	0·8	0·4		18 : — : —	4·0	Id. ; linear, crossed, and wo. cirri.
	4	814	55·7	48·3	7·4	1·3	0·8	20	18 : — : —	3·0	Id. ; crossed and mot. cirri ; cir.-str.
	5	802	52·8	46·3	6·5	1·8	1·0	19	— : 19 : 19	7·0	Woolly cirri and cirro-strati.
	6	789	52·1	46·2	5·9	1·4	0·4	20	— : 18 : —	7·0	Matted cirro-strati.
	7	787	49·9	44·8	5·1	0·5	0·5	20	20 : — : 17	8·0	Loose scud ; cirro-strati ; cirri.*
	8	796	48·2	44·1	4·1	0·5	1·0	20	20 : — : —	9·0	Patches of scud ; cirro-strati and cirri.*
	9	774	48·2	44·0	4·2	0·7	0·2	20	— : 17 : —	9·2	Dense cirro-strati lying S by W. to N by E.
	10	767	46·9	43·2	3·7	0·8	0·6	20		2·0	Clouds in patches, chiefly to E.
	11	768	44·8	42·0	2·8	0·4	0·0			1·5	Cirri, &c. ; uniform auroral light to N.
	12	765	46·0	43·4	2·6	0·1	0·2	19		9·0	Cirrous clouds and patches of scud ; aurora.
	13	29·768	46·9	44·3	2·6	1·0	0·3	19		9·5	Cirrous clouds ; a few drops of rain.
	14	766	46·5	45·0	1·5	0·2	0·1	19		9·5	Id. ; id. ; stars dim.
	15	775	46·2	45·4	0·8	0·1	0·0			10·0	Light rain ; dark.
	16	795	45·4	44·0	1·4	0·1	0·0			9·7	Rain ceased ; clouds broken.
	17	807	42·3	40·7	1·6	0·1	0·0	20	26 : — : 22	7·0	Scud ; woolly cirri.
	18	828	44·0	41·5	2·5	0·0	0·0	20	24 : — : —	9·7	Id. ; a few drops of rain.
	19	855	43·8	41·1	2·7	0·0	0·0		26 : — : —	9·0	Id. ; cir.-str. and linear cirri diverging from NNE.
	20	867	44·2	40·9	3·3	0·5	0·2	23		9·0	Cirri ; cirro-strati ; scud, cumuli.
	21	882	45·2	41·5	3·7	0·6	0·2	24	— : — : 20	8·5	Woolly cirri ; scud to SE. ; solar halo. [scud ; halo.
	22	896	46·1	41·4	4·7	0·9	0·5	26	— : — : 18	8·0	Woolly and linear cirri lying SSW. to NNE. ; cumuli ;
	23	917	48·6	42·2	6·4	2·0	1·9	25		2·0	Scud and loose cumuli ; woolly cirri ; cirrous haze.
18	0	930	50·0	42·6	7·4	1·3	1·1	27	25 : — : —	2·0	Masses of scud and cumuli ; cirri and cirrous haze.
	1	934	52·0	44·7	7·3	1·3	0·9	24	26 : — : —	2·0	Id. ; id. ;
	2	949	54·0	45·0	9·0	0·8	0·9	25	26 : — : —	7·0	Loose cumuli ; woolly and linear cirri.
	3	955	53·8	45·0	8·8	1·0	1·2	26	26 : — : —	4·0	Masses of scud and cum. : linear cirri and cirrous haze.
	4	955	53·8	45·0	8·8	1·1	0·2	24	26 : — : 26	5·0	Id. ; id.
	5	963	53·5	44·6	8·9	0·7	0·3	26		4·0	Id. ; woolly and mottled cirri.
	6	970	52·0	44·6	7·4	0·6	0·5	23	24 : — : 28	6·0	Scud ; woolly and feathered cirri.
	7	989	48·8	42·3	6·5	1·1	0·2	22	24 : — : —	8·0	Id. ; cirri to NW. with rectangular bend.
	8	29·999	47·0	41·3	5·7	0·3	0·1	21		10·0	Cirro-strati.
	9	30·008	46·9	42·0	4·9	0·3	0·1	21		9·7	Id. ; sky to NW.
	10	018	45·4	41·7	3·7	0·2	0·0	20		8·5	Id. ; stars very dim.
	11	004	44·9	41·3	3·6	0·1	0·0	19		10·0	Id.
	12	010	44·3	41·3	3·0	0·2	0·0			10·0	Dense cirrous clouds.
	13	30·008	45·3	42·0	3·3	0·1	0·0			9·9	Cirrous clouds ; a few stars visible.
	14	29·991	44·8	42·1	2·7	0·1	0·2	19		9·9	Id. ; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

* See additional meteorological notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
18	15	29·993	44·8	42·3	2·5	0·3	0·1	19		9·9	Cirrous clouds; a few stars visible.
	16	992	44·4	42·1	2·3	0·2	0·1	17		10·0	Id.
	17	983	44·7	43·1	1·6	0·4	0·2	18		10·0	Light rain.
	18	986	45·0	43·6	1·4	0·3	0·2	19		10·0	Dense cirrous mass; light rain.
	19	29·995	46·1	44·9	1·2	0·3	0·4	20	22 : 24 : —	10·0	Thin scud; thicker scud; dense cirrous clouds; light [rain.
	20	30·001	47·0	45·9	1·1	0·4	0·2	20		10·0	As before.
	21	009	49·5	47·6	1·9	0·3	0·1	19		10·0	Scud and cirrous clouds; light rain.
	22	016	51·0	49·1	1·9	0·3	0·4	19	24 : — : 29	10·0	Scud; woolly cirri.
	23	035	54·8	51·0	3·8	0·3	0·3	23	26 : — : —	9·9	Id. id.
19	0	031	56·7	52·1	4·6	0·3	0·2	23	24 : — : —	9·0	Id.
	1	025	60·0	53·5	6·5	0·9	1·5	28	— : 25 : 30	6·0	Cirro-stratous scud; woolly cirri lying in bands S by W. [to N by E.
	2	021	59·7	52·9	6·8	1·5	0·8	20	26 : 28 : 28	8·0	Scud; cirro-cumuli; cirro-strati, woolly cirri.
	3	022	59·1	52·5	6·6	1·6	0·6	20	24 : — : 28	8·0	Id.; woolly cirri.
	4	032	58·2	52·2	6·0	1·6	0·9	20	24 : 28 : —	8·0	Id.; beautifully chequered semifluid cirro-cumuli.
	5	042	55·5	51·0	4·5	1·8	1·0	20	24 : — : —	9·7	Id.; cirrous clouds.
	6	040	54·0	49·2	4·8	1·0	0·3	20	24 : — : —	9·8	Id.; cirro-cumuli, cirro-strati.
	7	026	54·8	49·6	5·2	1·3	0·6	20	24 : 26 : —	9·8	Id.; id.; id.
	8	029	53·3	49·0	4·3	0·9	0·7	21	25 : — : —	9·9	Id.; id.; id.
	9	024	52·9	49·0	3·9	1·4	0·5	21		9·9	Id.; id.; id.
	10	025	52·6	49·6	3·0	0·6	0·0			9·9	Cirro-cumulous scud; strong twilight to N.
	11	020	50·1	48·1	2·0	0·2	0·0			4·0	Clear in zenith; clouds near horizon.
	12	010	52·1	49·5	2·6	0·4	0·1	20		10·0	A few drops of rain.
	13	30·004	51·9	49·2	2·7	0·8	0·3	19		10·0	Dark; light rain.
	14	29·985	50·2	48·7	1·5	0·5	0·2	20		9·5	Scud; clouds broken; drops of rain.
	15	967	50·9	48·6	2·3	0·4	0·6	20		10·0	Rain.
	16	958	49·0	48·2	0·8	0·7	0·3	20		10·0	Fair; it rained till 15h 50m.
	17	956	50·3	48·5	1·8	1·5	0·2	20	24 : — : —	10·0	Scud; rain commenced at 16h 20m.
	18	959	49·5	48·8	0·7	0·6	0·1	20	24 : — : —	10·0	Id.; cirrous clouds; rain.
	19	948	51·7	50·0	1·7	0·7	0·7	20	24 : — : —	10·0	Id.; dense cirro-strati and cirrous haze.
	20	954	53·1	51·0	2·1	0·6	0·8	20	24 : 27 : —	9·8	Id.; cirro-strati.
	21	958	55·2	52·1	3·1	1·1	1·3	21	25 : 24 : —	6·0	Thin smoky scud; cirro-cumulo-strati; cirri.
	22	972	58·3	54·0	4·3	0·9	0·3	23	24 : — : —	9·9	Scud; cirrous clouds.
	23	968	59·0	54·2	4·8	0·3	0·5	25	24 : — : —	9·7	Id.; id.
20	0	957	62·0	56·0	6·0	0·5	0·2	21	24 : — : —	9·8	Id.; id.
	1	953	61·7	56·0	5·7	0·8	1·0	24	24 : — : —	9·8	Id.; cirro-strati and cirrous clouds.
	2	956	58·0	53·3	4·7	1·5	0·9	23	24 : — : —	10·0	Id.; id.
	3	953	57·8	53·0	4·8	1·4	0·5	24	24 : — : —	10·0	Id.; id.
	4	945	57·0	52·6	4·4	0·7	0·5	24	24 : — : —	10·0	Id.; id.
	5	953	55·9	52·1	3·8	0·3	0·2	24	24 : — : —	10·0	Id.; id.
	6	944	54·2	51·5	2·7	0·4	0·1	24	24 : — : —	10·0	Id.
	7	959	53·3	50·9	2·4	0·3	0·2	23	24 : — : —	10·0	Id.
	8	964	52·2	49·9	2·3	0·3	0·1	24	25 : — : —	10·0	Id.; cir.-str. to E.; clouds red to W.; light rain.
	9	979	51·0	48·9	2·1	0·1	0·0		25 : — : —	10·0	Id.
	10	989	46·4	45·4	1·0	0·2	0·0	4		10·0	Dark.
	11	29·998	46·1	45·1	1·0	0·1	0·0			10·0	Id.
	12	30·005	45·0	44·8	0·2	0·0	0·0			10·0	Id.; light rain.
21	1	29·959	…	…	…	0·3	…				
	13	29·896	42·4	42·0	0·4	0·6	0·0			10·0	Light rain.
	14	880	42·3	41·7	0·6	0·0	0·0			10·0	Dark.
	15	865	42·1	41·6	0·5	0·0	0·0			10·0	Id.
	16	861	42·1	41·6	0·5	0·0	0·0			10·0	Scud; cirrous clouds.
	17	852	42·0	41·6	0·4	0·0	0·0		24 : — : —	10·0	Id.; dense cirro-strati.
	18	850	42·3	41·6	0·7	0·0	0·0		24 : — : —	10·0	Id.; id.
	19	846	43·4	42·1	1·3	0·0	0·0	20	— : 24 : —	10·0	Cir.-str. scud; strati on Cheviot; patch of sky to S.
	20	841	45·3	43·5	1·8	0·0	0·0	18	— : 24 : —	8·5	Id.; id.; patch of scud to S.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
21 21	29·844	49·9	46·9	3·0	0·1	0·1	20	22 : 23 : —	9·7	Scud; cirro-stratous scud
22	845	50·8	47·7	3·1	0·1	0·0	20	24 : 24 : —	9·7	Id.; id., moving very slowly.
23	839	53·5	49·4	4·1	0·1	0·0	20		9·7	Id.; id.
22 0	832	55·0	50·7	4·3	0·4	0·1	18	24 : — : 24	9·0	Id., loose cumuli, woolly cirri.
1	838	51·1	48·1	3·0	0·2	0·2	26	24 : — : 24	10·0	Id., id., id.: light rain; showers.
2	844	53·0	48·8	4·2	0·4	1·3	26	24 : 24 : —	9·7	Scud and cirrous scud.
3	862	51·7	47·1	4·6	0·9	0·8	27	26 : — : —	4·0	Scud and cumuli.
4	849	53·4	45·9	7·5	1·2	1·0	25	26 : — : —	3·0	Id.
5	861	53·7	45·9	7·8	1·9	1·1	25	26 : — : —	2·5	Id.
6	868	52·0	45·5	6·5	0·5	0·3	25	26 : — : —	1·0	Id.
7	883	49·3	44·6	4·7	0·6	0·1	26	26 : — : —	0·7	Id.
8	903	47·0	43·0	4·0	0·2	0·0	21	25 : — : —	0·5	Loose scud; masses of cir.-str.; cirrous haze on hor.
9	911	46·0	42·2	3·8	0·1	0·1	25		0·2	Patches of scud; cir.-str. and cirrous haze on horizon.
10	924	44·8	41·4	3·4	0·1	0·0			2·0	Scud and cirro-strati.
11	933	45·0	2 ·0	3·0	0·1	0·0	22		7·0	Id.
12	937	44·1	41·8	2·3	0·1	0·1	20		9·5	Id.
13	29·927	43·2	41·1	2·1	0·1	0·0	19		4·0	Scud on horizon.
14	923	43·1	41·2	1·9	0·0	0·0	20		4·5	Id.
15	910	43·3	41·4	1·9	0·6	0·3	17		8·0	Scud.
16	907	43·3	41·2	2·1	0·2	0·0	19		6·0	Id.
17	898	40·3	39·3	1·0	0·0	0·0	19		8·0	Id., cirro-strati; stratus on Cheviot; sky red to E.
18	889	40·7	39·7	1·0	0·0	0·0	21		9·0	Scud to S. and W.; cir.-str. to E. [haze.
19	880	44·4	42·7	1·7	0·7	0·2	20	23 : — : —	9·0	Patches of scud; id.; linear cirri and cir.
20	861	46·7	43·7	3·0	1·0	0·8	20	24 : — : —	9·0	Masses of loose scud; cirrous haze and linear cirri.
21	854	48·8	45·0	3·8	1·7	0·8	20	23 : 24 : 24	8·0	Patches of scud; woolly cirri; cir.-str.; solar halo.
22	838	49·2	44·9	4·3	1·4	2·3	20	— : 24 : —	9·0	Cir.-cum. scud; patches of loose scud; cirri; cir.-str.
23	812	52·0	47·1	4·9	2·6	2·2	20	23 : — : —	9·0	Scud; cirrous clouds.
23 0	788	52·2	46·3	5·9	3·0	2·9	20	22 : — : —	8·0	Id.; cirrous haze and cirri; solar halo.
1	773	53·1	47·9	5·2	2·9	1·4	20	23 : — : —	8·0	Scud and loose cumuli.
2	746	55·2	48·3	6·9	4·0	1·5	20	22 : — : —	9·5	Id.; patches of cirri.
3	718	54·9	48·4	6·5	3·2	2·0	20	22 : — : —	9·0	Id.; id.
4	684	54·6	48·8	5·8	3·2	1·8	19	23 : — : —	6·0	Id.
5	651	53·3	48·1	5·2	4·8	2·6	20	23 : — : —	3·0	Id.
6	634	51·6	47·5	4·1	3·0	2·5	20	23 : — : —	8·0	Id.; cirri and cirro-strati to S.
7	629	51·3	47·1	4·2	2·6	0·7	20	23 : — : —	9·0	Scud; patches of cirri and cirro-strati.
8	612	50·7	45·4	5·3	1·5	0·4	20	22 : — : —	9·5	Id.; cirro-strati.
9	593	49·4	45·3	4·1	1·2	0·2	20	22 : — : —	8·0	Id.; id.
10	590	49·6	44·5	5·1	1·2	0·2	20		9·5	Id.; id.
11	561	49·1	43·8	5·3	0·2	0·9	20	24 : — : —	9·7	Id.; id.
12	531	48·3	44·8	3·5	2·6	1·8	20		9·0	Scud and cirrous clouds.
13	29·510	48·0	45·0	3·0	2·4	1·3	20		9·5	Scud and cirrous clouds.
14	518	47·8	46·9	0·9	2·4	0·8	24		10·0	Dark; light rain; passing shower.
15	512	45·9	40·0	5·9	3·5	3·4	26		0·5	Cirrous clouds to N.
16	561	44·3	38·2	6·1	3·8	2·4	24		1·5	Id. N. and E.
17	566	43·1	38·0	5·1	3·8	3·3	23	24 : — : 24	1·0	Scud; woolly cirri.
18	594	42·9	38·8	4·1	3·8	3·2	20	24 : — : —	1·5	Scud and loose cumuli; linear cirri.
19	609	44·7	38·8	5·9	3·0	1·6	22	26 : — : 25	0·5	Patches of loose scud; woolly and mottled cirri.
20	631	45·6	39·7	5·9	4·5	1·7	26	25 : — : —	6·0	Loose misty scud; thin cirri.
21	653	47·2	40·4	6·8	3·5	4·5	25	26 : — : 26	0·5	Patches of loose scud; thin cirri.
22	682	48·3	40·6	7·7	4·3	3·2	26	26 : — : —	0·5	Masses of loose scud.
23	721	49·9	41·8	8·1	4·1	1·7	25	26 : — : —	0·7	Id.
24 0	759	49·8	42·3	7·5	2·6	1·2	28	26 : — : —	1·5	Masses of scud and loose cumuli.
1	775	53·7	45·2	8·5	2·0	1·4	24	26 : — : —	5·0	Scud and cumuli.
2	801	52·1	44·6	7·5	1·8	0·3	25	26 : — : —	8·0	Id.
3	818	52·9	44·0	8·9	2·2	0·5	24	26 : — : —	3·0	Id.
4	824	52·6	43·5	9·1	1·7	0·8	25	26 : — : —	2·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	Baro-meter at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
24 5	29·841	51·8	43·8	8·0	1·4	0·5	25	26 : — : —	1·0	Scud and cumuli.
6	857	50·0	42·9	7·1	1·1	1·3	21	26 : — : —	2·0	Id.; patches of cirri and cirro-cumuli.
7	863	47·9	41·0	6·9	0·8	0·4	23	24 : 27 : —	2·0	Id.; cirro-strati and cymoid cirri.
8	885	44·7	39·0	5·7	0·4	0·0	20	— : 29 : —	1·0	Loose cirri and cirro-strati; very hazy to E.
9	905	43·9	38·9	5·0	0·0	0·0		— : 27 : —	6·0	Loose cirro-cumuli; lunar corona.
10	907	43·7	39·0	4·7	0·1	0·0	21		9·0	Id.
11	918	42·0	38·0	4·0	0·2	0·1	20		8·0	Id.
12	919	42·0	38·0	4·0	0·1	0·0	20		4·0	Loose cirrous clouds.
13	29·917	40·2	37·3	2·9	0·1	0·0	20		9·0	Loose cirrous clouds.
14	915	39·7	37·1	2·6	0·0	0·0	20		9·7	Id.
15	902	38·4	36·6	1·8	0·0	0·0	20		7·5	Id.
16	886	40·9	39·0	1·9	0·0	0·0	19		8·5	Id.
17	878	43·3	40·9	2·4	0·2	0·1	22	— : 24 : —	9·8	Cirro-strati and cirrous clouds.
18	886	45·2	42·7	2·5	0·3	0·1	24	20 : 24 : —	10·0	Loose scud; thick cirro-strati.
19	890	46·1	44·0	2·1	0·1	0·0			10·0	Id.; id. [and cir.-cum.
20	886	48·7	46·0	2·7	0·0	0·0		— : 23 : 23	9·7	The thick cirrous mass has broken up into woolly cirri
21	890	49·9	46·4	3·5	0·4	0·1	21	20 : — : —	10·0	Patches of loose scud; dense cirro-strati.
22	892	53·3	48·9	4·4	1·0	1·0	20		10·0	Id.; id.
23	882	53·6	48·2	5·4	0·8	0·4	20	22 : — : —	9·9	Thin scud; cirro-strati; woolly cirri.
25 0	882	55·0	49·3	5·7	1·0	1·0	21	20 : 22 : —	10·0	Patches of loose scud; thicker scud; dense cirro-strati.
1	874	57·0	51·4	5·6	1·0	0·8	20		9·5	Scud and dense cirro-strati.
2	865	59·7	52·7	7·0	1·2	0·5	21	20 : — : —	9·5	Loose scud; linear cirri and cirro-cumuli.
3	846	59·6	51·8	7·8	2·4	1·6	19	20 : — : 23	8·0	Id.; fine linear and woolly-cirri; cirro-strati.
4	838	58·8	52·0	6·8	2·1	0·4	19		9·5	Scud and cirro-strati; cirrous haze; solar halo?
5	829	56·2	49·9	6·3	0·8	0·4	20		9·5	Id.
6	820	55·0	50·0	5·0	0·4	0·4	19	20 : — : —	9·5	Scud; diffuse cirri and cirro-strati; solar halo.
7	818	52·2	48·2	4·0	0·5	0·1	20		9·7	
8	811	50·0	46·9	3·1	0·2	0·0		24 : — : —	9·9	Cirro-stratous scud; linear and woolly cirri; cir.-str.
9	804	48·5	46·0	2·5	0·0	0·0			10·0	Cirrous clouds and haze.
10	807	47·9	45·6	2·3	0·0	0·0			10·0	Thick cirrous clouds and cirro-strati.
11	801	45·0	43·6	1·4	0·0	0·0			9·9	Woolly and linear cirri, cirro-strati, cirrous haze.
12	794	45·2	43·9	1·3	0·0	0·0			8·0	Cirro-cumuli, cirro-strati, cirrous haze.
13	29·780	45·0	43·2	1·8	0·0	0·0			8·0	Cirro-cumuli, cirro-strati, cirrous haze.
14	764	45·0	42·9	2·1	0·0	0·0			8·0	Woolly cirri; stars shining faintly through the cirri.
15	747	43·7	41·7	2·0	0·0	0·0			7·0	Id., cirro-cumuli.
16	737	43·1	40·9	2·2	0·0	0·0		— : 20 : —	6·0	Woolly cirro-cumuli; cirro-strati, cirrous haze.
17	723	41·3	39·6	1·7	0·0	0·0			5·0	Cirri, cirro-strati, and cirrous haze.
18	719	43·8	41·1	2·7	0·2	0·0	20		5·0	Id., id., id.
19	726	45·2	42·6	2·6	0·1	0·0		— : 22 : —	9·5	Cirro-cumulous scud; cirro-strati and cirrous clouds.
20	726	48·6	46·0	2·6	0·1	0·3	19	21 : — : —	10·0	Loose scud; cirro-cumulous scud and cirrous clouds.
21	724	50·3	48·0	2·3	0·7	0·5	19	20 : — : —	9·7	Id.; id.
22	722	54·9	50·8	4·1	1·3	0·9	20	21 : 22 : 22	9·0	Id.; id.; cirri and cirro-strati.
23	719	57·8	51·3	6·5	1·2	1·2	20	24 : 22 : —	6·0	Scud; woolly cirri and cirro-cumuli.
26 0	724	57·0	50·2	6·8	1·3	0·4	21	23 : — : —	10·0	Thick scud; cirro-strati to E.
1	731	55·1	49·2	5·9	0·7	1·7	21	22 : — : —	10·0	Id.
2	767	50·8	46·7	4·1	1·5	0·9	25	24 : 22 : —	10·0	Loose smoky scud; thick scud.
3	780	51·9	46·5	5·4	1·9	0·8	26	24 : 22 : —	6·5	Loose scud; cirro-cumuli, cir.-str. lying SW. to NE.
4	787	53·6	44·6	9·0	1·4	1·6	25	— : 21 : —	3·0	Woolly cirri and cirro-cumuli; scud and cumuli.
5	807	53·1	44·0	9·1	2·0	0·6		25 : 21 : —	2·0	Scud and cumuli; cirri and cirro-cumuli; cirro-strati.
6	813	50·2	42·2	8·0	1·4	1·4	26		2·5	Id.; linear cirri and cirro-strati.
7	838	47·6	40·0	7·6	2·3	1·5	26		0·7	Id.; id.
8	856	45·1	37·2	7·9	1·6	0·4	26		1·0	Scud, cirro-strati, cirrous haze.
9	879	44·4	39·0	5·4	0·8	0·4	22		0·1	Patches of scud; haze to E.
10	895	43·3	38·0	5·3	0·4	0·4	21		0·1	Id.; id.
11	913	42·2	37·9	4·3	1·1	0·2	22	24 : — : —	0·5	Scud to W.; sky clear.
12	917	40·3	37·2	3·1	0·3	0·0		24 : — : —	2·0	Scud to S.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
26 13	29·933	38·8	36·4	2·4	0·1	0·0	19	24 : — : —	0·5	Scud to S.
14	935	37·2	35·3	1·9	0·2	0·0	19		0·5	Thin cirri radiating from SW by W.; lunar halo.
15	938	36·8	35·1	1·7	0·1	0·1	18		3·0	Cumuli, cirro-strati.
16	938	39·0	36·6	2·4	0·0	0·0			5·0	Id. id..
17	942	40·3	37·3	3·0	0·5	0·1	21	— : — : 24	6·5	Varieties of beautiful cirri.
18	945	41·5	37·7	3·8	0·4	0·4	23	24 : — : —	0·7	Patches of scud; cirri, cirro-strati.
19	958	43·5	39·4	4·1	0·9	0·5	24		0·1	Linear cirri to W.
20	964	45·8	40·8	5·0	1·1	0·9	24		0·1	Linear cirri to S.; cirrous haze to E.
21	980	47·8	41·5	6·3	2·2	1·2		26 : 28 : —	2·0	Masses of loose scud; thin cir.-str. lying NNW. to SSE.
22	982	50·0	43·2	6·8	2·1	1·9	26	25 : 30 : —	6·0	Id.; woolly cirri.
23	991	51·3	43·9	7·4	2·1	2·1	27	28 : — : 30	7·0	Scud; thin woolly cirri.
27 0	29·985	52·7	44·1	8·6	2·4	1·0	27	28 : — : 30	8·0	Thin scud; woolly and linear cirri; cumuli, cir.-str.
1	30·002	52·3	43·4	8·9	1·5	1·0	26	28 : — : —	9·9	Masses of scud; cumuli; cirro-strati.
2	30·000	52·8	45·0	7·8	1·0	0·8	26		9·7	Scud, cumuli, cirro-strati, cirrous haze.
3	30·000	54·1	45·5	8·6	1·5	1·6	27	— : 28 : —	9·7	Cirro-strati; patches of scud.
4	29·999	53·5	45·0	8·5	1·0	1·4	26		9·0	Id.
5	29·995	53·3	44·8	8·5	1·7	1·0	28	— : 26 : —	8·5	Cirro-strati and cirri; patches of scud.
6	30·016	52·0	44·1	7·9	1·5	1·0	28	26 : 26 : —	2·5	Loose cumuli; mottled and furrowed cir.-str.; cirri.
7	027	50·7	43·8	6·9	1·0	0·2	28	26 : 26 : 27	3·5	Id.; id.; id.
8	047	47·1	42·2	4·9	0·4	0·1	28		3·0	Nearly as before; cirro-strati looser.
9	074	47·8	42·1	5·7	0·1	0·1	27		6·0	As before; cirro-strati becoming cirro-cumuli.
10	089	45·5	41·2	4·3	0·2	0·0	27		5·0	Id.; id.
11	096	39·7	37·9	1·8	0·0	0·0			3·0	Id.
12	101	38·1	36·6	1·5	0·0	0·0			0·5	Cirro-strati.
23½	30·154	...	. .	...	0·0	0·0			......	Faint solar halo.
28 13	30·113	38·6	37·6	1·0	0·5	0·0			0·0	Clear.
14	101	36·0	35·5	0·5	0·0	0·0			0·0	Id.
15	101	35·6	35·0	0·6	0·0	0·0			0·2	Haze on E. horizon.
16	100	34·2	33·9	0·3	0·0	0·0			0·2	Cirro-strati and haze on E. horizon; hoar-frost.
17	092	33·5	33·3	0·2	0·0	0·0			0·2	Id.
18	100	34·7	34·0	0·7	0·0	0·0			0·2	Id.
19	104	37·1	36·0	1·1	0·0	0·0			0·0	Slight haze to E.
20	110	41·5	39·9	1·6	0·0	0·0			0·0	Id.
21	109	47·8	44·1	3·7	0·0	0·0			0·5	Streaks of cirri with haze to SE.
22	098	52·0	47·0	5·0	0·0	0·0			0·2	Streaks of cir.-str. to S. and SE.; cirrous haze to E.
23	093	56·9	50·1	6·8	0·0	0·0			0·5	Cirri to S.
29 0	082	60·9	51·6	9·3	0·0	0·0		— : — : 16	0·5	Light cirri over the sky.
1	071	62·3	51·6	10·7	0·1	0·0	12		0·2	Thin cirri; small patches of scud to S.
2	060	62·7	51·5	11·2	0·0	0·0		— : — : 14	0·5	Id., spread over the sky.
3	051	65·9	54·8	11·1	0·0	0·0			1·0	Id., id.
4	042	66·8	55·2	11·6	0·1	0·0	12	— : — : 14	3·0	Woolly cirri; patches of scud to N.
5	041	64·7	53·9	10·8	0·3	0·4	12		2·0	Thin cirri and cirrous haze.
6	038	60·3	51·0	9·3	0·6	0·2	13		2·0	Id.
7	043	57·6	49·5	8·1	0·2	0·1			5·0	Id. [cirro-strati.
8	049	53·5	47·3	6·2	0·1	0·0		— : 16 : —	6·0	A long streak of cirrus lying NNW. to SSE.; diffuse
9	056	48·9	43·3	5·6	0·0	0·0			3·0	Linear cirri; lunar corona.
10	063	45·0	42·4	2·6	0·0	0·0			0·5	Thin cirri and haze; faint lunar corona.
11	078	45·0	41·8	3·2	0·1	0·0	15		0·0	Id.; id.
12	084	42·1	39·7	2·4	0·0	0·0			0·1	Faint streak of cirrus; id.
13	30·089	37·6	36·5	1·1	0·0	0·0			0·0	Clear.
14	091	36·4	36·0	0·4	0·0	0·0			0·0	Id.
15	094	32·3	32·0	0·3	0·0	0·0			0·2	Streak of cirrus to E.
16	107	30·0	29·7	0·3	0·0	0·0			0·2	Id.; stratus and hoar-frost.
17	122	28·4	...	...	0·0	0·0			0·2	Id.; id.
18	129	29·7	29·7	...	0·0	0·0	18		0·5	Stratus to E., large bank of it above the Tweed.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time. d.	h.	BAROMETER at 32°. in.	THERMOMETERS. Dry. °	Wet. °	Diff. °	WIND. Maximum force in 1ʰ. lbs.	10ᵐ. lbs.	From pt.	Clouds, Sc.:C.-s.:Ci., moving from pt. pt. pt.	Sky clouded. 0—10.	Species of Clouds and Meteorological Remarks.
29	19	30·135	33·5	32·1	1·4	0·0	0·0			0·2	Linear cirri to W.; haze to E.; stratus in the valleys.
	20	144	37·0	36·1	0·9	0·0	0·0			0·2	Id.
	21	149	43·1	39·6	3·5	0·0	0·0			0·2	Thin cirri to SE.
	22	148	49·1	42·3	6·8	0·0	0·0			0·5	Thin linear cirri to S. and W.; haze on E. horizon.
	23	148	55·9	44·8	11·1	0·0	0·0	12	—:—:16	0·5	Thin cirri; cirrous haze and cirro-strati on N. hor.
30	0	141	58·9	47·2	11·7	0·1	0·1	12		0·5	Cirri and cirrous haze on horizon.
	1	140	61·5	49·5	12·0	0·3	0·2	13		0·2	Haze and streaks of cirri on horizon.
	2	142	63·1	48·3	14·8	0·2	0·2	15	—:—:24	1·0	Thin cirri; streaks of cirri and haze on horizon.
	3	139	63·5	50·2	13·3	0·2	0·1			1·0	Id.
	4	128	64·0	51·6	12·4	0·1	0·0			0·2	Cirrous haze on horizon.
	5	126	63·3	52·0	11·3	0·1	0·0	14		0·2	Id.
	6	138	59·6	49·9	9·7	0·2	0·1	14		0·7	Diffuse cirri and haze.
	7	145	56·8	46·1	10·7	0·1	0·0			2·5	Diffuse cirri radiating from about W.
	8	163	51·0	44·1	6·9	0·0	0·0			2·5	Id.
	9	179	46·2	40·4	5·8	0·0	0·0			2·5	Id.
	10	179	41·5	38·0	3·5	0·0	0·0			3·0	Diffuse cirri; lunar corona 3°—4° radius.
	11	192	40·1	36·4	3·7	0·0	0·0			1·0	Light cirri.
	12	195	36·9	34·0	2·9	0·0	0·0			0·2	Id., streaks of cirro-strati; very clear.
	13	30·197	35·7	33·3	2·4	0·0	0·0			0·2	Light cirri, streaks of cirro-strati.
	14	194	36·6	34·3	2·3	0·0	0·0			0·2	Id., id.
	15	195	38·0	36·0	2·0	0·0	0·0			0·2	Id., id.
	16	203	35·6	34·0	1·6	0·0	0·0			0·5	Cirri and cirrous haze on horizon.
	17	210	33·6	32·6	1·0	0·0	0·0			0·2	Id.
	18	217	36·9	35·4	1·5	0·0	0·0			0·2	Id.
	19	236	37·9	35·8	2·1	0·0	0·0	18		0·5	Id.
	20	240	43·4	39·3	4·1	0·0	0·0	24		0·5	Linear and diffuse cirri.
	21	229	50·2	45·0	5·2	0·0	0·0			0·5	Id.
	22	227	54·2	48·2	6·0	0·0	0·0			0·5	Id.
	23	224	58·1	51·5	6·6	0·0	0·0		—:—:20	0·5	Thin cirri moving slowly; cirrous haze on E. horizon.
1	0	213	64·7	53·4	11·3	0·0	0·0	14		0·2	Linear cirri.
	1	210	66·0	54·3	11·7	0·2	0·0	12		0·2	Id.
	2	200	67·9	55·7	12·2	0·2	0·2	13		0·0	Very hazy; ground invisible a few miles off.
	3	189	69·5	56·4	13·1	0·4	0·2	14		0·0	Id.; id.
	4	175	71·4	58·2	13·2	0·2	0·3	14		0·0	Haze nearly cleared off; Cheviot visible.
	5	175	70·4	57·8	12·6	0·2	0·1	13	—:—:22	1·5	Linear and woolly cirri.
	6	176	68·1	55·4	12·7	0·2	0·2	14	—:—:22	3·0	Id.; cirrous haze on horizon.
	7	183	64·7	53·8	10·9	0·3	0·1	14	—:—:20	3·0	Cirri; thick cirrous haze on horizon.
	8	193	59·0	52·7	6·3	0·3	0·1	15	—:—:18	4·0	Id.; id.
	9	199	55·7	50·1	5·6	0·2	0·0	16		4·0	Id.; id.
	10	224	51·9	48·3	3·6	0·2	0·0	16		3·0	Id.; id.
	11	235	48·2	46·1	2·1	0·1	0·1			3·0	Woolly cirri and cirrous haze.
	12	245	43·9	43·3	0·6	0·0	0·0			0·2	Sky rather hazy; stars dim.
	13	30·249	43·8	43·2	0·6	0·0	0·0			0·2	Rather clearer in zenith.
	14	257	43·0	42·1	0·9	0·0	0·0			0·2	Id.
	15	259	40·8	40·1	0·7	0·0	0·0			0·2	Streaks of cirri to SW.; hazy round horizon.
	16	255	39·5	39·2	0·3	0·0	0·0		—:—:31	4·0	Woolly cirri moving slowly; cirrous haze.
	17	257	41·0	40·2	0·8	0·0	0·0		—:—:31	6·0	Woolly cirri and cirrous haze; red to E.; hor. hazy.
	18	269	43·1	42·2	0·9	0·0	0·0			8·0	Cirri thicker, haze.
	19	277	47·6	45·0	2·6	0·0	0·0			7·0	Thin cirri and haze; the sun projects a faint shadow.
	20	281	51·3	47·7	3·6	0·0	0·0			7·0	Cirrous haze over the sky.
	21	281	57·9	52·9	5·0	0·0	0·0		—:—:24	10·0	A uniform covering of woolly cirri; solar halo.
	22	280	62·3	55·6	6·7	0·0	0·0			10·0	Id. id.
	23	271	64·0	55·8	8·2	0·0	0·0			10·0	As before; no halo.
2	0	258	65·7	58·0	7·7	0·0	0·0			10·0	Cirrous clouds and haze becoming rather thicker.
	1	243	68·4	57·4	11·0	0·0	0·0			10·0	Id.
	2	246	65·1	55·7	9·4	0·0	0·0			7·0	Cirrous clouds and cirro-cumuli; atmospheric haze.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

May 1ᵈ 5ʰ. On removing the dry and wet thermometers to the E. end of the Observatory, the readings were—Dry thermometer, 69°·5; Wet thermometer, 55°·1.

Gött. Mean Time.	Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0-10.	
2 3	30·228	67·7	58·0	9·7	0·0	0·0	8		5·0	Cirrous clouds; thick haze below.
4	205	67·6	57·3	10·3	0·0	0·0			3·0	Much haze.
5	190	68·1	57·0	11·1	0·0	0·0			2·0	Id.
6	172	67·2	56·0	11·2	0·0	0·0			2·0	Id.
7	159	63·5	54·5	9·0	0·0	0·0			1·0	Id.
8	168	58·1	52·0	6·1	0·0	0·0	6		1·0	Streaks of cirri to W.; thick haze on horizon.
9	163	54·0	49·5	4·5	0·0	0·0			0·5	Thick haze on horizon.
10	160	50·0	47·1	2·9	0·0	0·0			0·2	Id. [to E.
11	156	45·7	44·2	1·5	0·0	0·0			0·0	Haze on hor.; shooting star from Cassiopeia moving
12	151	43·6	42·8	0·8	0·0	0·0			0·0	Rather less haze than before.
13	30·140	41·1	40·9	0·2	0·0	0·0			0·0	Nearly as last hour; heavy dew.
14	130	38·9	38·7	0·2	0·0	0·0			0·0	Heavy dew; clear.
15	115	36·9	36·8	0·1	0·0	0·0			0·0	Id. id.
16	112	36·0	36·0	...	0·0	0·0			0·2	Fine cirri to N.; haze to E., red; stratus; dew.
17	102	35·2	35·2	...	0·0	0·0			1·5	Lines of cirri lying N by E. to S by W.; Sun red;
18	106	37·9	37·9	...	0·0	0·0		—:—: 1	2·5	Linear and crossed cirri; haze on hor. [stratus.
19	097	42·9	41·8	1·1	0·0	0·0		—:—: 2	6·0	Cirri lying SSW. to NNE.; id.
20	094	48·4	46·0	2·4	0·0	0·0			7·0	Id.; more haze.
21	096	53·6	49·6	4·0	0·0	0·0		—:—: 2	7·0	Id.; hazy.
22	084	58·2	52·9	5·3	0·0	0·0			7·0	Id.
23	074	59·8	53·0	6·8	0·0	0·0		—:—: 0	6·0	Id.
3 0	066	64·3	55·9	8·4	0·0	0·0		—:—: 0	7·0	Id.; haze on horizon.
1	056	65·5	54·3	11·2	0·0	0·0		—:—:31	7·0	Cirri lying N. and S.; patches of scud to S. and E.
2	048	69·5	55·1	14·4	0·0	0·0	12		8·0	Cirri, cirro-strati, and patches of scud.
3	040	69·6	56·0	13·6	0·0	0·0	14	—:—: 0	8·0	Woolly cirri; cirro-strati to E.; patches of scud.
4	037	66·3	54·6	11·7	0·3	0·1	12		8·0	Id.; scud to W.
5	042	65·9	53·5	12·4	0·6	0·2	8		6·0	Id.; patch of scud to N.; solar halo.
6	049	62·8	50·0	12·8	0·3	0·3	7	24:—: 0	7·0	Var. of cirri; many patches of scud and cum.; halo.
7	062	59·2	49·2	10·0	0·6	0·3	5	24:31: 0	7·0	Nearly as before; cirro-cumulous scud.
8	100	49·1	46·9	2·2	0·9	1·0	2	4: 0: 0	6·5	Loose smoky scud; cirro-cumulo-strati; cirri.
9	121	47·0	45·4	1·6	0·6	0·3	2	5:—:—	7·0	Thin scud; cirri radiating from NE by E.; sky milky.
10	146	45·2	44·4	0·8	0·2	0·0	2	27:—:—	5·0	Id., sky clouded varying from 8 to 2.
11	161	46·1	45·0	1·1	0·0	0·0			9·5	Id.
12	167	44·9	43·8	1·1	0·2	0·1	2		3·0	Loose scud.
13	30·170	46·2	44·6	1·6	0·1	0·0			9·7	Loose scud.
14	165	46·1	44·7	1·4	0·3	0·1	4		10·0	Id.
15	165	45·9	44·7	1·2	0·3	0·2	3		10·0	Id.
16	161	44·3	44·1	0·2	0·2	0·1	3		10·0	Id.; very light drizzle.
17	168	44·8	44·3	0·5	0·1	0·0			10·0	Id.; id.
18	173	45·0	44·4	0·6	0·1	0·1	3	4:—:—	10·0	Id.; id.
19	174	45·3	44·6	0·7	0·1	0·0	3	4:—:—	10·0	Id.; id.
20	177	46·0	45·2	0·8	0·1	0·1	3	4:—:—	10·0	Id.; id.
21	177	46·1	45·5	0·6	0·1	0·1	3	4:—:—	10·0	Id.; id.
22	172	47·6	46·6	1·0	0·1	0·0	3	3:—:—	10·0	Id.; id.
23	165	47·6	46·5	1·1	0·2	0·2	2	3:—:—	10·0	Id.; id.
4 0	170	48·2	46·7	1·5	0·3	0·1	3		10·0	Id.; id.
1	160	48·8	46·8	2·0	0·3	0·1	3		10·0	Id.; id.
2	157	49·2	47·3	1·9	0·3	0·2	2	4:—:—	10·0	Scud.
3	135	49·8	47·7	2·1	0·5	0·4	2	4:—:—	10·0	Id.
4	128	49·1	46·7	2·4	0·6	0·2	2	4:—:—	10·0	Id.
5	121	48·2	46·1	2·1	0·2	0·1	2	4:—:—	10·0	Id.
6	114	46·4	45·6	0·8	0·2	0·0		4:—:—	10·0	Id.
7	119	46·6	44·9	1·7	0·2	0·0	4	4:—:—	10·0	Id.
8	114	45·7	43·9	1·8	0·2	0·0		4:—:—	10·0	Id.
9	111	45·0	43·4	1·6	0·1	0·0	3	4:—:—	10·0	Id.
10	112	44·5	43·0	1·5	0·1	0·0			10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

May 3d 8h. A great change in the temperature and humidity of the air since 7h; the wind feeling quite damp.

Gött. Mean Time.	Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
4 11	30·099	44·1	43·0	1·1	0·0	0·0			10·0	Scud; dark.
12	096	43·8	42·5	1·3	0·1	0·0	3		10·0	Id.; id.
23	29·990	...	...	...	0·1	0·1	4			
5 6½	889	...	...	...	...	...	5	6 : 14 : 26		Loose scud; ragged cumuli, cumulo-strati; woolly cirri.
13	29·834	46·6	46·5	0·1	0·9	0·0			10·0	Thick fog; very slight drizzle.
14	818	46·4	46·3	0·1	0·0	0·0			10·0	Id.; id.
15	800	46·1	46·0	0·1	0·0	0·0			10·0	Id.; id.
16	777	46·2	46·0	0·2	0·0	0·0			10·0	Id.; id.
17	769	45·9	45·7	0·2	0·0	0·0	8		10·0	Scud; fog.
18	759	46·0	45·6	0·4	0·0	0·0	8	4 : — : —	10·0	Id.; fog nearly cleared off.
19	747	47·0	46·3	0·7	0·0	0·0			10·0	Id.; cirri.
20	743	47·4	46·9	0·5	0·0	0·0		— : — : 1	8·0	Woolly cirri; scud all round.
21	736	50·9	48·8	2·1	0·0	0·0			3·0	Thin cirri, haze below; faint solar halo.
22	721	53·4	50·2	3·2	0·0	0·0			3·0	Thin woolly cirri and cirrous haze.
23	707	57·1	52·8	4·3	0·0	0·0			0·5	Haze.
6 0	679	62·0	55·5	6·5	0·0	0·0		16 : — : —	7·0	Loose cumuli; very hazy round horizon.
1	655	68·1	57·4	10·7	0·6	0·5	14		7·0	Id.
2	637	70·5	57·5	13·0	0·9	0·5	15	16 : — : —	8·0	Loose cumuli and scud; thick haze.
3	617	68·0	56·0	12·0	1·2	0·4	14		8·0	Id.; id.
4	596	66·2	55·2	11·0	1·2	0·9	14	18 : — : —	9·0	Id.
5	587	64·5	54·9	9·6	1·2	0·7	15	17 : — : —	9·5	Id.; cirri; drops of rain; hazy.
6	585	62·3	56·2	6·1	1·1	0·3	15	17 : 18 : —	9·0	Scud and cum., two currents; cirri; light rain; hazy.
7	576	62·8	56·0	6·8	0·2	0·1	14	17 : 18 : —	7·5	As before; no rain; haze clearing off.
8	584	61·0	53·0	8·0	0·1	0·0	19		9·0	Id.; cirri near horizon; large drops of rain.
9	589	56·1	51·7	4·4	0·0	0·0	17	17 : — : —	7·5	Scud; cirrous haze and cirri to W.; hazy to E.
10	592	54·6	49·6	5·0	0·0	0·0			7·0	Id.; id.; stars dim.
11	586	51·6	48·0	3·6	0·0	0·0			0·5	Haze over the sky; patches of scud to NW.
12	587	53·0	48·2	4·8	0·4	0·0	14		0·0	Hazy; stars very dim.
13	29·581	49·6	46·7	2·9	0·0	0·0			0·0	Hazy; stars very dim.
14	570	50·1	47·0	3·1	0·0	0·0			8·0	Scud; cirrous clouds and haze?
15	569	50·8	47·5	3·3	0·0	0·0			8·5	Scud and loose cumuli; hazy.
16	573	50·1	47·7	2·4	0·0	0·0		18 : — : —	10·0	Scud.
17	570	49·6	47·9	1·7	0·0	0·0		16 : — : —	10·0	Id.; much haze.
18	587	49·4	47·7	1·7	0·0	0·0		16 : — : —	10·0	Id.; cirro-strati; drops of rain; Sun rose very red.
19	609	48·2	46·2	2·0	0·0	0·0		19 : — : —	10·0	Thick scud, moving very slowly; colour dappled gray.
20	628	48·2	44·3	3·9	0·0	0·0	30		10·0	Id.; heavy shower of rain, large drops.
21	642	47·0	44·5	2·5	0·0	0·0	28	20 : — : —	10·0	Scud; rain.
22	652	50·2	45·9	4·3	0·1	0·1	29	19 : — : —	10·0	Id.
23	652	54·8	48·4	6·4	0·1	0·0	24	21 : — : —	10·0	Id.
7 0	659	57·6	51·0	6·6	0·0	0·0	24	20 : — : —	9·0	Cirro-cumulous scud.
1	655	60·7	53·1	7·6	0·0	0·0	28	16 : — : —	9·0	Id., loose cumuli; cirri.
2	654	61·9	52·7	9·2	0·0	0·0	14	22, 26, 1 : — : 18	7·5	Scud and loose cumuli from various points; cirri.
3	654	59·5	50·5	9·0	0·0	0·0	24	20 : — : —	8·5	Loose cumuli and scud; cirri.
4	654	62·8	52·0	10·8	0·0	0·0	28	18 : — : —	9·5	Id.
5	657	57·1	50·1	7·0	0·1	0·0	3	20 : — : —	8·0	Id., with cirro-cumulous disposition.
6	668	55·0	49·0	6·0	0·0	0·0		18 : — : —	8·0	Cirro-cumulous scud; cirri; patches of ragged scud.
7	676	53·8	48·0	5·8	0·0	0·0		18 : — : —	4·0	Id.; cirrous haze and cirri.
8	694	51·7	46·9	4·8	0·0	0·0		18 : — : —	3·0	Scud; cirrous haze to N.
9	713	48·7	45·3	3·4	0·0	0·0		18 : — : —	3·0	Id.; id.
10	730	43·5	42·4	1·1	0·0	0·0			1·0	Id.; cirro-strati, cirrous haze.
11	740	42·6	41·8	0·8	0·0	0·0			1·0	Id.
12	752	38·2	38·0	0·2	0·0	0·0			1·0	Clouds and haze on horizon; clear in zenith.
13	29·750	37·2	36·9	0·3	0·0	0·0			0·5	Clouds and haze on horizon.
14	746	37·0	36·7	0·3	0·0	0·0			0·5	Id.
15	751	35·2	35·0	0·2	0·0	0·0			0·5	Scud to W.; cirri and cirro-strati to E.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
7	16	29·752	36·5	35·9	0·6	0·0	0·0		— : 23 : —	4·0	Cirro-stratous scud; cirri, cirro-strati, and cirrous haze.
	17	764	35·2	34·8	0·4	0·0	0·0		— : 23 : —	4·0	Cirro-cumulous scud; thick scud to N. and S.; cirri.
	18	768	38·0	37·0	1·0	0·0	0·0		20 : — : —	8·0	Scud and loose cumuli; cirri, cirro-strati, cirrous haze.
	19	779	41·6	39·5	2·1	0·0	0·0		20 : — : —	8·0	Scud; cirro-strati on horizon.
	20	782	46·0	42·3	3·7	0·0	0·0		20 : — : —	8·0	Id.; id.
	21	784	51·0	46·8	4·2	0·0	0·0	2	18 : — : —	6·0	Cirro-cumulous scud; very hazy to E.
	22	782	52·3	46·4	5·9	0·0	0·0			2·0	Cirri, cirro-strati, and masses of cumuli.
	23	778	55·2	48·2	7·0	0·0	0·0			2·0	Scud and cumuli; cirri and cirrous haze.
8	0	765	58·1	50·0	8·1	0·0	0·0		17 : — : —	7·0	Scud; cirrous haze on horizon.
	1	750	62·1	53·6	8·5	0·0	0·0		19 : — : —	8·5	Scud and loose cumuli.
	2	744	62·6	52·9	9·7	0·0	0·0		18 : — : —	8·5	Id.
	3	734	62·0	54·6	7·4	0·1	0·0	4	18 : — : —	8·0	Id.; cirri.
	4	718	62·9	54·5	8·4	0·1	0·0	7	18 : — : —	7·0	Id.; linear cirri and cirrous haze.
	5	709	61·0	53·2	7·8	0·0	0·0	4	15 : 19 : —	9·0	Cumuli, cumulo-strati; loose scud; fine cirri; hazy.
	6	703	62·0	54·0	8·0	0·2	0·2	15	20 : — : —	9·5	Scud and loose cumuli; very hazy on E. horizon.
	7	711	58·0	50·0	8·0	0·6	0·2	14		9·5	Id.; cirri to N.
	8	726	54·2	48·0	6·2	0·4	0·2	14		6·0	Scud, cirro-strati, and woolly cirri.
	9	745	51·0	46·6	4·4	0·2	0·0	16		3·0	Patches of scud; cirrous haze.
	10	752	47·2	43·9	3·3	0·0	0·0	16		3·0	Cirri and cirrous haze.
	11	763	44·3	41·6	2·7	0·0	0·0			1·5	Cirri to N. and E.
	12	767	41·9	39·7	2·2	0·0	0·0			1·0	Id.
	13	29·765	39·7	38·0	1·7	0·0	0·0			0·5	Cirri to N. and E.
	14	759	35·5	35·0	0·5	0·0	0·0			0·5	Id.
	15	763	33·8	33·5	0·3	0·0	0·0			0·5	Id.
	16	762	32·0	31·8	0·2	0·0	0·0		— : — : 26	1·0	Woolly and diffuse cirri; mist from the river.
	17	762	34·0	33·4	0·6	0·0	0·0		— : — : 26	1·5	Id.; Sun risen very red.
	18	763	35·9	35·1	0·8	0·0	0·0	16	— : — : 20	2·5	Id.; hazy cirri to E.
	19	768	41·2	39·9	1·3	0·0	0·0			3·0	Woolly cirri lying N. and S.
	20	764	46·3	43·3	3·0	0·0	0·0		— : — : 20	6·0	Woolly cirri and cirrous haze; thick haze on horizon.
	21	765	51·9	46·5	5·4	0·0	0·0		— : — : 23	7·0	Woolly and linear cirri and cirrous haze.
	22	748	55·6	48·3	7·3	0·0	0·0			7·0	Id.
	23	746	59·0	51·2	7·8	0·0	0·0		— : 22 : 22	8·0	Cirri and cirro-cumuli.
9	0	727	63·8	54·7	9·1	0·0	0·0		— : 22 : —	9·7	Cirro-cumulo-strati.
	1	719	63·8	54·2	9·6	0·2	0·2	19	— : 22 : —	9·0	Cirro-cumuli, cirro-strati.
	2	718	63·7	53·0	10·7	0·4	0·1	18	— : 24 : —	7·0	Id. id.; thick haze on E. horizon.
	3	709	67·1	55·6	11·5	0·4	0·1	19		8·0	Cirro-cumulo and cirro-strati nearly stationary.
	4	705	64·0	54·0	10·0	0·2	0·2	18	18 : 24 : —	9·0	Patches of scud; cirro-cumulo, cirro-strati; cum. to E.
	5	707	60·0	52·7	7·3	0·2	0·1	20	18 : — : 19	9·7	Cirro-stratous scud; woolly cirri.
	6	709	58·0	51·9	6·1	0·2	0·1	20	— : 19 : —	9·9	Uniform mass of cirro-strati; scud; drops of rain.
	7	715	53·0	51·5	1·5	0·0	0·0	20	20 : 19 : —	10·0	Id.; id.; slight shower.
	8	714	52·2	51·3	0·9	0·0	0·0	20	20 : 19 : —	10·0	Id.; id.; still raining.
	9	715	51·2	50·8	0·4	0·0	0·0	20		10·0	As before.
	10	708	50·7	50·3	0·4	0·0	0·0	20		10·0	Id.
	11	700	50·7	50·0	0·7	0·0	0·0			10·0	Light rain.
	12	685	50·5	50·1	0·4	0·0	0·0			10·0	Raining.
	13	29·675	50·3	50·0	0·3	0·0	0·0			10·0	Light rain.
	14	663	50·0	49·4	0·6	0·0	0·0			10·0	Id.
	15	664	48·8	47·0	1·8	0·0	0·2	24		9·7	Sky on N. horizon.
	16	669	46·8	44·2	2·6	0·3	0·0			9·7	Loose scud; cirro-strati and cirrous clouds.
	17	674	45·2	43·3	1·9	0·1	0·0		25 : 20 : —	8·0	Id.; thicker scud.
	18	681	42·9	40·4	2·5	0·0	0·0	25		2·0	Scud to E.; loose scud lying on Cheviot.
	19	688	44·2	41·4	2·8	0·0	0·0	26	0 : — : —	5·0	Scud.
	20	695	47·0	43·0	4·0	0·0	0·0	26	29 : 0 : —	9·7	Loose scud in patches; thicker scud above.
	21	700	43·4	42·2	1·2	0·3	0·5	29	28 : — : —	10·0	Scud; rain.
	22	701	45·5	44·1	1·4	0·1	0·1	28	31 : — : —	10·0	Id.; id.
	23	692	46·3	44·9	1·4	0·4	0·2	30	4 : 28 : —	10·0	Scud in two currents; raining.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
10	0	29·687	50·1	47·3	2·8	0·7	0·9	30	31 : 2 : —	10·0	Scud in two currents; raining.
	1	691	51·2	48·2	3·0	0·7	0·2	29	30 : 2 : —	10·0	Id.
	2	703	50·9	48·0	2·9	1·1	0·6	27	30 : 2 : —	10·0	Id.
	3	717	49·3	47·9	1·4	1·2	1·1	31	0 : — : —	10·0	Scud.
	4	733	47·4	47·2	0·2	1·3	0·9	2	2 : — : —	10·0	Id.; rain^3
	5	737	50·0	48·0	2·0	0·8	0·8	2	2 : — : —	9·8	Loose scud; thick cirrous clouds.
	6	753	49·3	47·4	1·9	0·8	0·7	0	1 : — : —	10·0	Scud.
	7	754	48·3	47·1	1·2	0·8	0·2	0	0 : — : —	10·0	Id.
	8	772	47·9	47·3	0·6	1·0	0·1	0	1 : — : —	10·0	Id.; rain^1
	9	790	47·9	47·1	0·8	0·9	1·5	2	1 : — : —	10·0	Id.; id.
	10	796	47·6	46·9	0·7	1·7	0·3	3		10·0	Id.
	11	801	48·0	47·0	1·0	0·8	0·2	2		10·0	Id.
	12	801	47·3	47·0	0·3	1·1	0·9	1		10·0	Very dark; rain^1
	13	29·805	47·5	47·0	0·5	0·8	0·5	2		10·0	Very dark; fair.
	14	806	47·9	47·0	0·9	1·1	0·3	2		10·0	Id.
	15	820	47·4	46·8	0·6	0·5	0·2	2		10·0	Id.
	16	821	47·2	46·5	0·7	0·5	0·2	2		10·0	Scud.
	17	830	47·1	46·3	0·8	0·8	0·2	2	1 : — : —	10·0	Id.; rain^1
	18	849	47·1	46·6	0·5	0·1	0·0		1 : — : —	10·0	Id.; fair.
	19	871	48·0	47·0	1·0	0·4	0·0	2	1 : — : —	10·0	Id.
	20	880	48·1	47·1	1·0	0·1	0·0			10·0	A nearly uniform covering of scud.
	21	888	49·3	47·9	1·4	0·1	0·2	1	2 : — : —	10·0	Thick scud.
	22	888	50·0	48·5	1·5	0·5	0·6	2		10·0	Id.
	23	895	50·1	48·5	1·6	0·5	0·2	2		10·0	Id.
11	0	894	50·7	48·7	2·0	0·4	0·1	3	2 : — : —	10·0	Id.
	1	902	51·0	49·0	2·0	0·2	0·1	3	2 : — : —	10·0	Id.
	2	906	52·1	50·0	2·1	0·2	0·1	2	2 : — : —	10·0	Id.
	3	897	53·0	50·6	2·4	0·0	0·0	4	2 : — : —	10·0	Id.; slight break to NW.
	4	899	52·9	50·8	2·1	0·0	0·0		2 : — : —	10·0	Id.
	5	895	51·6	50·0	1·6	0·0	0·0		2 : — : —	10·0	Id.
	6	897	51·9	50·1	1·8	0·0	0·0	2		10·0	Uniform mass of scud.
	7	895	51·3	50·0	1·3	0·0	0·0	8		10·0	Id.
	8	905	51·2	50·0	1·2	0·0	0·0			10·0	Id.; 8h 40m a break in scud, woolly cirri.
	9	914	50·0	49·3	0·7	0·0	0·0			10·0	Cir.-cum. scud to W.; cir.-str. tinged with yellow.
	10	902	50·4	49·8	0·6	0·0	0·0			10·0	Scud.
	11	919	50·6	49·7	0·9	0·0	0·0			10·0	Id.
	12	922	49·3	48·6	0·7	0·0	0·0			10·0	Thick scud, dark.
	23	29·964	...	...	...	0·0	0·0	24		......	A solar halo in the afternoon.
12	13	30·090	48·3	47·0	1·3	0·8	0·0			2·0	Cirro-strati, cirrous haze; stars dim.
	14	096	47·2	45·4	1·8	0·0	0·0			1·0	Id., id.
	15	114	47·0	44·5	2·5	0·0	0·0			2·0	Id., id.; cumuli on NE. horizon.
	16	104	44·6	42·8	1·8	0·0	0·0			2·0	Cirri, cir.-str., and cir. haze; scud and cum. to NE.
	17	120	41·7	40·9	0·8	0·0	0·0			4·0	Id.; id.
	18	132	45·3	44·0	1·3	0·0	0·0		7 : — : —	9·0	Scud; cirrous clouds and haze.
	19	149	49·7	46·7	3·0	0·0	0·0		— : 24 : —	9·9	Cirro-stratous scud, moving very slowly.
	20	157	54·1	49·3	4·8	0·0	0·0	22	— : 30 : —	9·5	Id.; linear cirri and cirrous haze.
	21	162	53·5	48·5	5·0	0·0	0·0	12		9·5	Scud; linear cirri to NW.; cirro-strati to S.
	22	160	54·8	49·0	5·8	0·0	0·0	20	23 : — : 24	5·5	Scud and loose cumuli; varieties of cirri; cirrous haze.
	23	158	56·9	50·3	6·6	0·0	0·0	20	— : — : 28	8·0	Id. on horizon; cirri.
13	0	147	58·9	50·5	8·4	0·0	0·0		— : — : 26	7·0	Cirri and cirrous haze; patches of loose cumuli to SE.
	1	137	62·1	53·0	9·1	0·0	0·0	24		8·7	Thick cirri and cirrous haze; faint solar halo.
	2	116	64·8	54·9	9·9	0·0	0·0	20	— : — : 24	9·0	Id.; id.
	3	108	68·0	57·0	11·0	0·0	0·0	20		9·5	As before, no scud; solar halo.
	4	094	69·0	58·1	10·9	0·0	0·5	28	— : 25 : 28	9·0	Cir.-cum.; cirri; cir.-str. to W.; patch of scud to S.
	5	085	68·8	58·2	10·6	1·1	0·2	24	26 : — : —	9·5	Scud; cirri and cirro-strati; mottled cirri to S.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

May 10d 4h. The heaviness of the rain falling has been estimated upon the supposition that the heaviest fall is 10, and the estimations are given as above "rain^3."

May 10d 19h. Observations made at 19h 10m.

Gott. Mean Time.		Baro-meter at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
13	6	30·091	66·0	57·6	8·4	0·2	0·2	26		9·7	Cirro-strati and cirri.
	7	100	62·6	56·3	6·3	0·5	0·3	29	— : 26 : 26	9·5	Cirro-cumulous scud, cirro-strati; cirri and cir. haze.
	8	109	59·5	54·9	4·6	0·3	0·3	24	25 : 26 : 26	10·0	Loose scud; cirro-cumuli, cirro-strati; woolly cirri.
	9	102	58·6	54·8	3·8	0·4	0·0	26	24 : — : —	9·5	Id.; mottled cirri, cirro-cumuli.
	10	090	57·9	54·7	3·2	0·3	0·1	23		9·0	Id.; cirro-cumulous scud, cirro-strati.
	11	093	57·8	54·0	3·8	0·5	0·1	23		9·5	Id.; id. id.
	12	093	57·1	53·8	3·3	0·5	0·2	26	28 : — : —	9·0	Thick scud lying in a belt from NW. to SE.
	13	30·080	55·2	52·9	2·3	0·8	0·2	25		8·0	Clear in zenith.
	14	073	56·6	52·7	3·9	0·9	0·1	26		9·5	Masses of scud.
	15	090	55·1	52·3	2·8	0·3	0·0			9·9	Scud.
	16	083	53·9	51·1	2·8	0·1	0·0	25	26 : — : —	8·5	Id.; cirri, cirro-strati, cir.-cum.; clouds red to E.
	17	096	53·6	51·3	2·3	0·2	0·1	25	31 : 26 : —	8·0	Id. in two currents; cirri, cir.-str.; scud on Cheviot.
	18	105	53·5	51·5	2·0	0·1	0·0	25	31 : — : —	8·0	Id.; cirri, cirro-strati; dense mass on Cheviot.
	19	120	55·2	51·9	3·3	0·0	0·0			2·0	Loose scud; cirro-strati.
	20	122	57·0	52·7	4·3	0·2	0·2	3	3, 30 : 2 : —	3·5	Loose scud in two currents; cirro-cumulous scud.
	21	181	48·2	46·3	1·9	0·9	0·2	3		10·0	Uniform mass of scud.
	22	193	47·9	45·7	2·2	0·2	0·0	3	4 : — : —	10·0	Id.
	23	198	49·0	45·9	3·1	0·2	0·0	6	5 : — : —	10·0	Scud.
14	0	203	50·7	46·8	3·9	0·1	0·0		5 : — : —	10·0	Id.
	1	208	51·8	47·1	4·7	0·1	0·1	6	5 : — : —	10·0	Id.; dense cirro-strati.
	2	210	53·9	47·7	5·2	0·1	0·0			10·0	Dense cirro-strati and cirrous haze.
	3	203	52·9	47·1	5·8	0·0	0·0		— : 2 : —	9·7	Clouds broken up into cir.-str. scud; cirri, cirro-strati.
	4	198	55·0	48·7	6·3	0 0	0·0		— : 1 : 28	9·5	Cirro-stratous scud; woolly and mottled cirri.
	5	199	53·1	47·0	6·1	0·0	0·0		2 : — : 30	10·0	Patches of scud; woolly cirri and cirrous haze.
	6	193	52·5	46·8	5·7	0·0	0·0		— : 30 : 30	10·0	Woolly cirri and cirro-strati. [NNW. to SSE.
	7	201	51·1	45·6	5·5	0·0	0·0		— : 30 : —	10·0	Id.; narrow belt of dark cir.-str. lying
	8	201	49·1	44·8	4·3	0·0	0·0	6	— : 25 : —	9·5	Cirro-strati lying E. and W.; cirri and cirrous haze.
	9	201	46·4	43·7	2·7	0·0	0·0		27 : — : —	9·0	Loose scud; cirri and haze.
	10	213	46·3	43·3	3·0	0·0	0·0			8·0	Scud; cirrous clouds and haze.
	11	225	44·8	43·0	1·8	0·0	0·0			9·7	Id.; id.
	12	237	44·3	42·4	1·9	0·0	0·0			7·0	Id.; cirri.
	13	30·229	44·0	42·4	1·6	0·0	0·0			7·0	Scud; cirri; sky in zenith.
	14	226	44·0	42·9	1·1	0·0	0·0			7·0	Id.; id.; id.
	15	227	44·4	43·4	1·0	0·0	0·0			10·0	Id.
	16	227	44·4	42·7	1·7	0·0	0·0		1 : — : —	10·0	Id.; woolly cirri in narrow bands lying NW. and SE.
	17	233	44·7	42·3	2·4	0·0	0·0	2	2 : — : 0	9·7	Id.; woolly cirri.
	18	243	45·0	43·0	2·0	0·0	0·0		— : 0 : —	9·0	Loose woolly cirro-cumuli; fine linear cirri.
	19	240	48·0	43·4	4·6	0·0	0·0		— : 0 : —	9·5	Id.; cirri and cirro-strati.
	20	217	49·2	44·0	5·2	0·0	0·0	4		8·0	Cirri and cirro-strati; patches of scud.
	21	255	50·0	46·3	3·7	0·0	0·0		0 : — : —	4·0	Masses of scud; linear cirri to S.
	22	251	50·9	44·2	6·7	0·1	0·0	1	31 : — : —	3·0	Thin scud.
	23	260	52·5	45·7	6·8	0·0	0·0	12		2·5	Scud; cirri.
15	0	253	53·2	46·1	7·1	0·0	0·0	4	30 : — : —	4·0	Thin scud.
	1	210	53·0	46·1	6·9	0·1	0·0	6		0·5	Patches of scud; linear cirri.
	2	233	54·1	46·5	7·6	0·0	0·0	12		0·5	Id.; id.
	3	217	55·0	47·3	7·7	0·0	0·0			1·0	Linear cirri and cirrous haze.
	4	195	55·6	48·0	7·6	0·0	0·0	8	— : — : 28	1·0	Cirri and cirrous haze; cirro-strati and haze to E.
	5	182	56·2	48·2	8·0	0·0	0·0	8		0·2	Id.
	6	166	56·2	49·0	7·2	0·0	0·0	8		0·2	Streaks of cirri.
	7	162	55·3	48·3	7·0	0·0	0·0	4		0·5	Patches of cirro-strati and cirri; hazy on horizon.
	8	159	52·7	47·0	5·7	0·0	0·0	4		0·7	Id.; cirro-strati.
	9	163	48·7	44·7	4·0	0·0	0·0	4	— : 29 : —	2·5	Loose cir.-str., cir.-cum.-str.; a tendency to cymoid cirri.
	10	157	45·9	42·8	3·1	0·0	0·0	2	22 : 28 : —	2·0	Scud; cirro-cumuli.
	11	148	42·2	40·4	1·8	0·0	0·0			0·5	Cirrous haze on horizon.
	12	134	37·2	36·8	0·4	0·0	0·0			0·2	Clear; cirrous haze on horizon.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

May 13d 20h. At 20h 0m the lowest current of scud was just distinguishable to E.; at 20h 12m it covered the whole sky, the wind changing at the same time from NW by N. to NE by N. At 20h 18m the dry thermometer read 50°·0, and the wet 48°·3; at 20h 30m, barometer, 30·163.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1^h.	10^m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
15 13	30·119	36·3	36·1	0·2	0·0	0·0			0·0	Clear; cirrous haze on horizon.
14	106	35·7	35·6	0·1	0·0	0·0			0·2	Id.; cirro-strati on N. and NE. horizon.
15	085	34·7	34·5	0·2	0·0	0·0			0·2	Id.; id.
16	065	36·6	36·5	0·1	0·0	0·0			0·5	Cirro-strati and cirrous haze to E.; much hoar-frost.
17	044	37·0	36·7	0·3	0·0	0·0		— : 22 : 22	3·0	Cir.-cum., cirro-strati, and cirri; cirrous haze on hor.
18	031	38·6	38·0	0·6	0·0	0·0		— : 21 : —	7·0	Id.; id.
19	30·004	41·3	40·6	0·7	0·0	0·0	18	— : — : 19	6·5	Cirri lying SSW. to NNE., moving slowly; cir.-cum.
20	29·991	43·8	42·7	1·1	0·0	0·0			5·0	Feathery and tufted cirri lying in belts.
21	962	51·0	47·4	3·6	0·0	0·0	28	— : — : 20	7·0	Cirri lying S by W. to N by E.; patches of scud.
22	941	53·9	48·7	5·2	0·0	0·0	24	22 : — : 18	8·0	Scud; crossed and woolly cirri; cumuli on SW. hor.
23	912	55·5	49·2	6·3	0·0	0·0	20	— : — : 18	8·0	Cirri lying N. and S.; loose cumuli on SE. horizon.
16 0	894	57·8	49·2	8·6	0·0	0·0	28	— : — : 16	8·0	Id.; cumuli to S.; haze on E. hor.
1	866	59·0	49·0	10·0	0·0	0·0	28		8·0	Cirri, cirro-strati, cirro-cumuli, cumuli.
2	845	61·0	51·0	10·0	0·0	0·0	24 v.	30 : 30 : 18	2·7	Scud, cir.-str.; mottled and branched cirri; cir. haze.
3	825	60·9	50·9	10·0	0·0	0·0	30		3·0	As before.
4	812	60·3	50·2	10·1	0·2	0·4	28	26 : — : 18	6·0	Patches of cumuli; woolly cirri.
5	795	61·1	50·1	11·0	0·1	0·0	28	— : 29 : 18	6·0	Cirro-cumulous scud; cirri.
6	786	59·0	50·9	8·1	0·0	0·0		29 : — : —	6·0	Scud; cirro-cumuli; cirro-strati.
7	782	54·7	49·6	5·1	0·1	0·1	4	— : 28 : —	4·0	Cirro-cumulous scud.
8	777	53·1	48·0	5·1	0·0	0·0	4	— : 28 : —	9·5	Id.
9	772	52·0	48·0	4·0	0·0	0·0		28 : — : —	10·0	Thick watery scud; clouds red to NW.
10	773	51·7	47·9	3·8	0·0	0·0		28 : — : —	10·0	Scud; drops of light rain.
11	754	50·3	47·0	3·3	0·0	0·0			9·9	Id.
12	748	50·9	47·2	3·7	0·0	0·0			8·0	Id.
13	29·737	49·6	46·2	3·4	0·0	0·0			9·0	Scud.
14	736	50·5	46·1	4·4	0·0	1·9	3		10·0	Id.
15	766	42·0	40·5	1·5	1·7	0·2	2		10·0	Rain[1] since 14^h 30^m.
16	791	41·2	39·8	1·4	0·4	0·1	1	3 : — : —	10·0	Scud.
17	822	40·0	37·5	2·5	2·0	1·3	2	0 : — : —	9·9	Id.; cumuli, cirro-strati; rain[2]; showers[3] since 16^h.
18	839	40·6	36·9	3·7	2·4	1·2	0	0 : — : —	10·0	Id.
19	855	41·2	37·8	3·4	1·2	0·9	0	1 : — : —	9·8	Id.; cirro-strati to E.
20	871	40·3	38·2	2·1	1·3	0·4	0	0 : — : —	5·0	Scud and loose cumuli; light shower of fine hail.
21	873	43·0	37·4	5·6	2·2	2·6	0 v.	0 : — : —	4·0	Long ranges of loose cumuli.
22	871	44·8	39·2	5·6	3·3	2·8	0	0 : — : —	8·0	Scud and loose cumuli.
23	866	45·7	39·9	5·8	2·8	2·1	0	31 : 2 : —	8·5	Id.; cir.-cum. scud; showers to E. and N.
17 0	873	45·6	39·2	6·4	4·0	2·4	0	0 : — : —	7·0	Id.; shower of hail at 23^h 30^m when temp.
1	869	46·9	40·7	6·2	3·7	1·9	0	0 : — : —	7·0	Scud and cumuli; shower[4] at 0^h 45^m. [fell to 39°.
2	859	46·3	40·0	6·3	3·3	1·9	1	0 : — : —	7·0	Id.; snow on Cheviot.
3	857	46·6	40·3	6·3	3·1	1·6	0	0 : — : —	10·0	Id.; a few hailstones falling.
4	853	43·6	39·7	3·9	3·1	1·5	2	31 : — : —	10·0	Id.
5	854	40·1	37·6	2·5	1·6	1·0		31 : — : —	9·5	Id.; shower[5] of hail.
6	848	41·5	38·1	3·4	2·8	1·3	31	0 : — : —	9·0	Scud; rain falling to N.
7	850	41·7	38·3	3·4	1·8	0·3	0		2·5	Id., cumuli and cirro-strati on horizon.
8	848	40·0	35·8	4·2	2·0	0·2	0	0 : — : —	6·0	Id.; cumuli, cumulo-strati; shower to E.
9	865	38·7	35·0	3·7	1·0	0·3	31	0 : — : —	2·0	Id.; showers around.
10	864	37·8	34·9	2·9	1·1	1·1	31	0 : — : —	3·0	Id.
11	867	36·8	34·4	2·4	1·4	0·1	31	0 : — : —	6·5	Id.
12	869	36·2	33·1	3·1	0·4	0·3	31	31 : — : —	1·5	Id.
13	29·863	34·8	32·0	2·8	0·5	0·1	30		1·7	Scud.
14	856	34·4	31·8	2·6	0·2	0·0	31		1·7	Id.
15	850	33·0	31·0	2·0	0·1	0·0	31		2·5	Id.
16	847	30·9	29·4	1·5	0·0	0·0			1·0	Id.
17	847	31·3	30·0	1·3	0·0	0·0	28	2 : — : —	7·5	Id.; loose cumuli to N.
18	852	36·9	33·7	3·2	0·2	0·1	30	2 : — : —	7·0	Id.; id.
19	859	38·8	35·0	3·8	0·3	0·2	31		9·5	Id.
20	871	40·0	35·9	4·1	0·3	0·4	31	2 : — : —	8·5	Id.; cumuli on horizon; cirrous clouds.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

May 16^d 14^h. Gusts of wind commenced at 14^h 2^m, and rain at 14^h 30^m.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
17	21	29·884	43·2	38·2	5·0	0·7	0·4	0	1 : — : —	9·5	Scud and loose cumuli; cirro-strati.
	22	887	43·1	38·3	4·8	1·1	0·6	0		9·5	Id.
	23	892	46·3	41·0	5·3	1·8	0·8	1		9·0	Id.
18	0	896	47·0	40·3	6·7	1·5	0·9	5	1 : — : —	9·0	Id.; shower of hail since 23h.
	1	912	46·2	40·2	6·0	2·1	0·1	2	1 : 3 : —	9·7	Scud and cumuli in two currents.
	2	931	47·2	40·8	6·4	1·6	1·0	2	1 : — : —	9·7	Scud and loose cumuli.
	3	938	45·5	39·9	5·6	1·4	1·1	2		9·5	Id.; cirrous clouds.
	4	944	45·0	40·0	5·0	1·6	0·8	2		6·0	Id.; id.
	5	917	45·0	40·0	5·0	1·3	0·4	2	2 : — : —	7·0	Cumuli; shower[3] since 4h.
	6	968	45·3	39·9	5·4	0·9	0·3	2	1 : — : —	6·5	Scud and cumuli; a few drops of rain.
	7	980	45·0	39·6	5·4	0·8	0·2	2	1 : — : —	1·5	Id.
	8	29·997	42·1	38·1	4·0	0·2	0·1	2	0 : — : —	3·0	Id.
	9	30·018	40·0	37·3	2·7	0·0	0·0	1	0 : — : —	1·5	Cirro-cumulous scud; sky hazy to E.
	10	040	37·2	35·7	1·5	0·0	0·0	0		1·0	Scud on horizon.
	11	045	37·0	35·7	1·3	0·0	0·0			3·0	Scud.
	12	047	38·2	36·7	1·5	0·0	0·0			3·5	Id.; at 12h 10m rain[1]
19	0	30·053	...	...	...	1·8	...	2			
	13	30·042	42·3	38·0	4·3	1·8	0·1	2		10·0	Scud.
	14	30·024	42·7	37·8	4·9	0·5	0·2	2		10·0	Id.
	15	30·015	42·5	38·0	4·5	0·6	0·1	2		10·0	Id.
	16	29·999	42·5	38·0	4·5	0·6	0·1	2	2 : — : —	10·0	Id.
	17	29·998	42·8	38·4	4·4	0·9	0·4	2	2 : — : —	10·0	Id.; cirro-strati on E. horizon.
	18	29·994	43·2	38·4	4·8	1·1	0·8	1	2 : — : —	10·0	Id.
	19	30·008	44·0	39·5	4·5	1·0	0·5	2	2 : — : —	9·9	Id.
	20	30·018	45·3	40·2	5·1	1·2	0·5	2	2 : — : —	9·9	Id.
	21	30·009	46·0	40·7	5·3	1·3	0·6	2	2 : — : —	9·0	Id.
	22	30·003	46·4	40·7	5·7	1·4	0·5	1	2 : — : —	6·0	Scud and loose cumuli.
	23	29·990	48·0	42·2	5·8	1·0	0·6	2	2 : — : —	7·0	Id.
20	0	990	50·6	44·0	6·6	1·1	0·2	2	2 : — : —	3·0	Id.
	1	978	49·8	43·3	6·5	0·7	0·4	3	1 : — : —	1·7	Id.
	2	966	51·6	45·0	6·6	0·9	0·6	3	0 : — : —	1·0	Id.
	3	970	51·1	44·9	6·2	1·2	0·9	3	0 : — : —	1·5	Id.; cirri to NW.
	4	960	52·0	45·3	6·7	1·3	1·1	3		0·5	Patches of scud and cum. to S.; cir.-str. and cir. haze.
	5	966	50·7	44·7	6·0	1·5	1·2	2		0·7	Id.; cirri and cirro-strati.
	6	953	50·2	44·8	5·4	2·2	0·3	2		1·5	Cirri and patches of scud.
	7	966	48·7	43·2	5·5	1·1	0·7	2		1·5	Cirri; range of cumuli on S. and E. horizon.
	8	968	47·9	43·1	4·8	0·8	0·4	3	— : — : 1	8·0	Thick woolly cirri, cir.-cum. on the edges; grey scud.
	9	968	46·5	42·2	4·3	1·4	0·6	1	2 : — : —	9·0	Thick semifluid cirro-stratous scud; cirro-strati; cirri.
	10	959	46·5	42·2	4·3	0·5	0·8	0	— : 3 : —	9·2	Cirro-stratous scud; cirro-strati to E.
	11	956	45·8	41·7	4·1	1·2	1·1	2		8·0	Id.; cirri.
	12	951	43·9	41·1	2·8	1·6	0·9	0		8·5	Scud and cirrous clouds.
	13	29·965	44·3	41·7	2·6	1·3	0·8	3		9·7	Scud and cirrous clouds; shower[2]
	14	963	44·0	42·1	1·9	1·1	0·9	2		10·0	Scud; showers[2]
	15	971	44·0	42·8	1·2	1·5	0·8	2		10·0	Rain[←1]
	16	964	43·9	42·9	1·0	1·0	0·8	2		10·0	Rain[←2]
	17	957	45·7	44·0	1·7	0·7	1·2	3	5 : — : —	10·0	Scud.
	18	990	45·6	43·6	2·0	2·0	1·7	3	5 : — : —	10·0	Id.
	19	29·987	46·4	43·9	2·5	2·2	1·1	2		10·0	Id.; scud on Cheviot.
	20	30·012	46·8	44·2	2·6	2·2	2·1	3		10·0	Id.
	21	030	48·7	45·7	3·0	2·1	2·0	3	5 : — : —	10·0	Thick semifluid scud; loose scud to E. and S.
	22	033	49·2	46·2	3·0	2·5	2·0	3		10·0	Id.
	23	050	49·9	46·8	3·1	2·8	2·3	3		10·0	Id.; shower to E.
21	0	053	51·8	47·3	4·5	2·6	1·8	1		10·0	Very thick homogeneous scud; scud on Cheviot.
	1	080	51·4	46·8	4·6	1·9	2·0	2		9·9	Thick semifluid cirro-stratous scud; loose scud below.
	2	073	51·3	46·8	4·5	2·6	1·8	5	— : 5 : —	9·9	Cirro-cumuli; loose scud and cirro-strati to S.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
21	3	30·088	53·2	47·8	5·4	1·6	1·7	5		9·5	Cirro-cumuli; loose scud and cirro-strati to E.
	4	067	54·0	48·6	5·4	1·8	1·2	5	— : 5 : —	6·0	Id.
	5	061	55·3	49·0	6·3	2·5	1·7	5		3·0	Cirro-strati, cirro-cumuli; cumuli, cumulo-strati.
	6	082	52·8	47·7	5·1	3·0	1·5	4	— : 4 : —	8·0	Cirri, cirro-cumuli, cirro-strati; solar halo.*
	7	087	51·5	46·4	5·1	1·8	0·8	3		9·0	As before.
	8	111	50·2	45·5	4·7	1·5	0·2	2		9·0	Cirri thicker; cirro-cumuli looser; no halo.
	9	124	47·8	44·0	3·8	0·2	0·1	2		9·5	Cirri, cir.-str., and cir.-cum.; cirri red to NW. at 9½h.
	10	135	46·3	43·3	3·0	0·0	0·0	2		2·5	Id., cirrous haze; scud.
	11	146	42·1	40·9	1·2	0·0	0·0			2·0	Cirro-strati and cirri near horizon; lunar corona.
	12	158	41·7	40·3	1·4	0·0	0·0			2·0	Cirro-strati and cirri.
	13	30·166	38·2	37·6	0·6	0·0	0·0			1·0	Cirro-strati and cirri.
	14	155	39·7	37·9	1·8	0·0	0·0			0·5	Id.
	15	149	36·6	36·0	0·6	0·0	0·0			0·5	Id.
	16	151	39·1	38·1	1·0	0·0	0·0			0·5	Cirro-strati.
	17	146	41·3	40·2	1·1	0·0	0·0			0·5	Cirro-strati to S. and SW.; cumulo-strati to SE.
	18	157	40·9	40·4	0·5	0·0	0·0			0·2	Id.; id.
	19	163	47·7	44·8	2·9	0·2	0·2	2		0·5	Scud on horizon to SE. and NE.; cirro-strati.
	20	157	51·2	48·1	3·1	0·3	0·2	3	4 : — : —	3·0	Scud; cirro-strati to S.
	21	151	49·9	48·5	1·4	0·1	0·1	4		10·0	Id.
	22	172	51·8	50·0	1·8	0·0	0·0	4		9·9	Id.; two small breaks showing green sky.
	23	168	51·2	48·3	2·9	0·2	0·1	7		10·0	Id.
22	0	170	49·6	47·4	2·2	0·1	0·1	4		10·0	Id., nearly homogeneous.
	1	166	50·5	48·2	2·3	0·0	0·0	4		10·0	Id.
	2	154	52·7	48·4	4·3	0·0	0·0	4		9·7	Id.; breaking to N.
	3	145	53·2	49·3	3·9	0·0	0·0	4		0·5	Id.
	4	140	55·3	49·3	6·0	0·1	0·0	4		0·2	Id. on E. horizon.
	5	135	53·8	49·3	4·5	0·2	0·1	4		0·2	Id.
	6	132	51·4	46·9	4·5	0·2	0·2	5		0·0	Haze to E.
	7	136	51·4	47·0	4·4	0·1	0·1	6		0·0	Id.
	8	144	49·5	45·7	3·8	0·0	0·0	7		0·0	Id.
	9	161	44·8	43·0	1·8	0·0	0·0			0·0	Id.
	10	165	42·4	41·4	1·0	0·0	0·0			0·0	Id.
	11	157	39·8	38·8	1·0	0·0	0·0			0·2	Haze to NE.
	12	150	38·0	37·5	0·5	0·0	0·0			0·1	Clouds to NE.
	13	30·134	37·9	37·2	0·7	0·0	0·0			0·1	Clouds to NE.
	14	136	34·6	34·2	0·4	0·0	0·0			0·1	Id.
	15	139	34·0	33·8	0·2	0·0	0·0			0·1	Id.
	16	135	34·0	33·8	0·2	0·0	0·0			0·1	Cirri, tinged with yellow to NE.
	17	138	34·9	34·5	0·4	0·0	0·0			0·2	Cirri and cirrous haze on E. horizon.
	18	133	37·9	37·2	0·7	0·0	0·0			0·3	Id.
	19	133	42·0	40·2	1·8	0·0	0·0	16		0·5	Woolly cirri to N.; scud to NE.; hazy to E.
	20	135	49·0	46·0	3·0	0·0	0·0	2	4 : — : —	0·6	As before.
	21	139	50·3	46·7	3·6	0·0	0·0	2	4 : — : —	0·5	Scud; woolly cirri; haze on horizon.
	22	134	52·2	47·7	4·5	0·2	0·1	5		1·0	Scud to E.; mottled and linear cirri.
	23	129	52·8	48·0	4·8	0·2	0·1	6		1·3	Id.; id.
23	0	119	55·7	49·9	5·8	0·1	0·2	6	— : — : 4	1·5	Mottled and woolly cirri; scud on E. horizon.
	1	100	55·4	50·0	5·4	0·2	0·1	6		1·5	Woolly cirri; scud on E. horizon.
	2	099	54·7	49·5	5·2	0·2	0·2	3		1·5	Linear and curled cirri; scud.
	3	097	55·3	50·6	4·7	0·3	0·3	4	3 : — : —	1·8	Scud; woolly and diffuse cirri.
	4	080	53·9	50·7	3·2	0·4	0·2	6	4 : — : —	8·0	Id.; id.
	5	062	52·9	50·0	2·9	0·1	0·0	4		9·7	Id.
	6	055	50·5	48·2	2·3	0·1	0·0	4		10·0	Id.
	7	053	49·8	47·0	2·8	0·1	0·0		4 : — : —	5·0	Id.; loose cumuli and cirrous clouds.
	8	056	48·9	46·2	2·7	0·0	0·0			9·5	Id.; sky to S.
	9	060	46·4	45·0	1·4	0·0	0·0	4	4 : — : —	10·0	Id.
	10	060	45·7	44·4	1·3	0·1	0·0	4		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

* See additional meteorological notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
23 11	30·053	45·8	44·0	1·8	0·0	0·0	4		10·0	Scud.
12	049	45·6	43·9	1·7	0·0	0·0	4		10·0	Id.
13	30·033	45·0	43·4	1·6	0·1	0·0	4		10·0	Scud.
14	021	45·2	43·2	2·0	0·0	0·0	2		10·0	Id.
15	013	44·6	42·3	2·3	0·1	0·0	3	3 : — : —	9·5	Id.
16	009	44·3	42·2	2·1	0·1	0·1	3	3 : — : —	9·8	Id.
17	009	44·3	42·0	2·3	0·0	0·0	1	3 : — : —	10·0	Id.
18	013	44·5	42·1	2·4	0·0	0·0	2	3 : — : —	10·0	Id.
19	003	45·2	43·0	2·2	0·0	0·0	1	3 : — : —	10·0	Id.
20	30·003	47·2	44·2	3·0	0·1	0·0	1	3 : — : —	10·0	Id.
21	29·995	48·0	45·0	3·0	0·1	0·1	2	3 : — : —	10·0	Id.
22	30·002	49·9	45·5	4·4	0·1	0·0	1	2 : — : —	9·9	Id.; sky in zenith.
23	30·002	49·4	45·2	4·2	0·1	0·2	5	2 : — : —	8·0	Thin scud; linear cirri to W.
24 0	29·989	50·4	45·9	4·5	0·3	0·2	2		3·0	Linear cirri; scud on horizon; clear in zenith.
1	973	52·2	47·1	5·1	0·3	0·1	6		0·7	Woolly cirri; scud on S. and E. horizon.
2	964	54·7	47·9	6·8	0·2	0·1	3		1·0	Id.; scud and cirrous haze on E. horizon.
3	950	56·1	49·1	7·0	0·2	0·1	6		0·5	Cirri and cirro-strati; haze on E. horizon.
4	935	57·8	50·2	7·6	0·2	0·1	3		1·0	Cirro-strati on S. hor.; woolly cirri; haze on E. hor.
5	934	56·9	49·6	7·3	0·5	0·2	6		0·5	As before.
6	936	54·1	47·9	6·2	0·2	0·2	4		0·2	Cirri and cirro-strati to S.
7	932	51·8	47·3	4·5	0·1	0·0	5		0·5	Mottled and woolly cirri and cirro-strati; hazy to E.
8	946	49·4	45·7	3·7	0·0	0·0	4	— : — : 28	0·5	Id.; id.
9	959	45·5	43·7	1·8	0·0	0·0	5	4 : — : —	2·5	Scud; patches of cirri.
10	972	45·9	44·0	1·9	0·0	0·0	4		10·0	Id.
11	976	45·6	44·0	1·6	0·0	0·0	4		10·0	Id.
12	976	45·6	44·8	0·8	0·0	0·2	3		10·0	Id.; the wind commenced to blow at 13h 5m.
13	29·976	44·5	44·5	…	0·4	0·0	2		10·0	Rain[1]
14	978	45·0	44·6	0·4	0·2	0·1	4		10·0	Scud.
15	975	45·3	44·8	0·5	0·0	0·0	2		10·0	Id.
16	971	45·9	45·0	0·9	0·0	0·0			10·0	Rain[0·5]
17	969	46·2	45·4	0·8	0·1	0·0	2		10·0	Scud.
18	983	47·0	45·0	2·0	0·1	0·1	2	4 : — : —	10·0	Id.
19	989	48·6	45·0	3·6	0·4	0·2	4	4 : — : —	9·8	Id.
20	29·994	49·8	45·3	4·5	0·3	0·1	3	4 : — : —	9·9	Id.
21	30·002	51·6	46·2	5·4	0·3	0·3	2	4 : — : —	7·0	Scud and loose cumuli.
22	29·997	51·6	45·7	5·9	0·3	0·3	2	4 : — : —	2·0	Id.
23	30·000	53·3	46·3	7·0	0·2	0·3	2		0·1	Very light cirri to S. and E.
25 0	30·005	54·1	45·0	9·1	0·4	0·5	2		0·2	Cirri and cirrous haze to S. and E.
1	30·007	54·9	44·0	10·9	0·5	0·7	2		1·0	Id.
2	29·999	56·8	46·1	10·7	0·6	0·5	2	2 : — : —	1·0	Patches of scud; cirri and cirrous haze.
3	29·994	56·3	46·7	9·6	0·6	0·4	2		0·8	As before; wind in gusts.
4	29·999	55·8	46·6	9·2	0·3	0·5	2		1·0	Id.
5	30·014	53·0	46·6	6·4	0·9	0·5	1	2 : — : —	0·7	Scud and loose cumuli.
6	032	50·2	44·7	5·5	0·8	1·0	4	2 : — : —	5·0	Id.
7	012	47·5	42·5	5·0	0·7	0·4	3		7·0	Id.
8	061	46·0	41·3	4·7	0·8	0·3	3		2·0	Id.
9	077	45·2	41·3	3·9	0·9	0·4	2	2 : — : —	2·0	Scud; cirrous haze.
10	088	42·1	38·8	3·3	0·5	0·0	0	2 : — : —	7·0	Id.
11	094	43·9	39·1	4·8	0·1	0·0	0		9·7	Id.
12	103	44·6	39·7	4·9	0·4	0·2	2		9·8	Id.
23½	30·153	…	…	…	2·4	…	2			
26 13	30·161	40·2	38·9	1·3	3·1	0·0	28	2 : — : —	5·0	Cirro-cumulous scud.
14	156	44·0	41·4	2·6	0·0	0·0	0		8·0	Id.
15	150	45·0	41·8	3·2	0·1	0·0	0		10·0	Id.
16	147	46·0	42·4	3·6	0·3	0·1	2	2 : — : —	9·8	Scud; linear cirri.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
26	17	30·147	45·7	42·5	3·2	0·5	0·0	31	2 : — : —	9·0	Scud ; linear cirri ; sky to NW.
	18	152	45·0	42·1	2·9	0·0	0·0	1	2 : — : —	2·0	Id. ; mottled cirri.
	19	146	45·6	44·0	1·6	0·4	0·3	3		2·0	Scud and loose cumuli ; dense mass of scud to E.
	20	162	48·2	44·2	4·0	1·0	0·3	2	2 : — : —	9·0	Scud ; loose cumuli to NW. ; sky to W.
	21	159	50·3	45·9	4·4	0·9	0·7	3	2 : — : —	9·0	Scud and loose cumuli.
	22	164	51·0	47·0	4·0	1·4	0·3	3	2 : — : —	9·9	Id.
	23	165	51·9	47·9	4·0	0·9	0·3	4	2 : — : —	9·5	Id.
27	0	158	50·2	47·8	2·4	0·7	0·9	5	2 : — : —	8·5	Id.
	1	163	51·7	47·0	4·7	0·6	0·3	5		9·0	Id.
	2	150	51·2	46·2	5·0	0·8	0·5	2		1·0	Id.
	3	139	51·3	45·9	5·4	0·9	0·8	4		0·5	Id.
	4	134	50·9	45·2	5·7	0·8	0·5	4		0·5	Id.
	5	130	50·1	45·2	4·9	0·8	0·3	4		0·5	Patches of loose cumuli to E. ; cirro-strati to NW.
	6	124	48·1	44·2	3·9	0·4	0·3	6	3 : — : —	0·7	Scud ; cirrous haze and linear cirri to NW.
	7	132	46·9	43·4	3·5	0·6	0·2	6	3 : — : —	1·0	Id. ; linear cirri radiating from NNE.
	8	135	45·0	42·2	2·8	0·2	0·1	2		1·0	Id. ; id.
	9	143	43·2	41·2	2·0	0·0	0·0	3	2 : — : —	1·8	Scud, cumuli ; mottled and woolly cirri.
	10	143	41·0	39·8	1·2	0·0	0·0	2	3 : — : —	8·5	Cirro-cumulous scud ; woolly cirro-cumuli.
	11	138	40·6	39·4	1·2	0·0	0·0			7·0	Id. ; cirrous haze.
	12	128	39·9	38·9	1·0	0·0	0·0			7·0	Cirro-cumuli, cirro-cumulous scud ; cirrous haze, cirri.
	13	30·124	38·6	38·0	0·6	0·0	0·0			9·5	Principally cirro-cumuli.
	14	107	38·2	37·9	0·3	0·0	0·0			9·7	Id.
	15	092	39·3	38·7	0·6	0·0	0·0			9·5	Id. [red to NE.
	16	081	39·7	39·2	0·5	0·0	0·0		— : 3 : —	9·5	Large cir.-cum. ; woolly and linear cirri to E. ; clouds
	17	079	39·1	38·7	0·4	0·0	0·0		3 : — : —	9·7	Loose scud ; cirro-cumuli and cirri.
	18	071	41·0	40·1	0·9	0·0	0·0		3 : — : —	9·8	Scud ; cirrous clouds.
	19	064	44·8	43·1	1·7	0·0	0·0			10·0	Id. ; id.
	20	058	45·5	43·8	1·7	0·0	0·0	0	3 : — : —	10·0	Id.
	21	046	47·9	45·0	2·9	0·0	0·0	2		10·0	Id.
	22	037	49·9	46·0	3·9	0·0	0·0	2	2 : — : —	10·0	Id.
	23	026	51·3	46·0	5·3	0·0	0·1	4		10·0	Id.
28	0	027	49·5	46·0	3·5	0·1	0·1	2	4 : — : —	10·0	Id.
	1	30·018	50·4	46·3	4·1	0·1	0·1	3	4 : — : —	10·0	Id.
	2	29·996	49·8	46·2	3·6	0·1	0·0	6	4 : — : —	10·0	Id.
	3	990	49·2	46·8	2·4	0·0	0·0	6	4 : — : —	10·0	Id.
	4	976	50·6	47·5	3·1	0·0	0·0		4 : — : —	10·0	Id.
	5	959	51·5	47·3	4·2	0·0	0·0	6	2 : — : —	8·5	Id.
	6	958	50·0	46·2	3·8	0·2	0·1	6	2 : — : —	5·0	Id.
	7	955	47·6	44·7	2·9	0·1	0·0	6	3 : — : —	7·0	Id.
	8	957	46·6	43·7	2·9	0·0	0·0	4	3 : — : —	7·0	Id.
	9	960	44·1	42·0	2·1	0·0	0·0		4 : — : —	8·0	Id.
	10	959	44·6	42·6	2·0	0·0	0·0		4 : — : —	10·0	Id.
	11	948	44·0	42·6	1·4	0·0	0·0			10·0	Id.
	12	948	44·2	42·8	1·4	0·0	0·0			10·0	Id.
	13	29·939	44·0	43·0	1·0	0·0	0·0			10·0	Rain$^{0·5}$
	14	928	44·0	42·9	1·1	0·0	0·0			10·0	Scud.
	15	920	43·1	42·1	1·0	0·0	0·0			10·0	Id.
	16	913	44·0	42·0	2·0	0·0	0·0	4	4 : — : —	10·0	Id.
	17	925	43·8	41·0	2·8	0·0	0·0			10·0	Id.
	18	926	44·0	41·0	3·0	0·0	0·0	2		10·0	Id.
	19	927	45·0	42·0	3·0	0·0	0·0	4		10·0	Id.
	20	933	45·8	42·8	3·0	0·0	0·0			10·0	Id.
	21	930	46·4	43·3	3·1	0·3	0·1	4		10·0	Id.
	22	928	47·0	43·9	3·1	0·3	0·2	3		10·0	Id.
	23	926	49·1	45·1	4·0	0·3	0·1	4		10·0	Id.
29	0	926	49·4	45·2	4·2	0·3	0·3	4	5 : — : —	10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

May 28d 4h. Observation made at 4h 7m.

May 28d 19h. Observation made at 19h 13m.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0–10.	
29 1	29·918	51·8	47·0	4·8	0·3	0·2	4	5 : — : —	10·0	Scud.
2	913	51·0	46·1	4·9	0·4	0·2	4	4 : — : —	9·5	Id.
3	909	50·7	46·1	4·6	0·3	0·3	2	4 : — : —	9·8	Id.
4	911	50·1	46·1	4·0	0·3	0·3	2	4 : — : —	10·0	Id.
5	910	49·6	45·3	4·3	0·3	0·1	4	4 : — : —	10·0	Id.
6	905	48·2	45·0	3·2	0·4	0·1	3	3 : — : —	10·0	Id.
7	918	47·3	43·3	4·0	0·3	0·1	4		10·0	Id.
8	910	46·5	43·0	3·5	0·2	0·2	2		10·0	Id.; a few drops of rain.
9	907	46·0	44·0	2·0	0·2	0·1	3	2 : — : —	10·0	Id.
10	913	45·5	43·2	2·3	0·1	0·0			10·0	Id.
11	924	45·7	43·6	2·1	0·1	0·1	2		10·0	Id.
12	919	45·3	43·3	2·0	0·5	0·3	3		10·0	Id.
13	29·915	44·5	43·1	1·4	0·5	0·8	2		10·0	Scud; rain^{1}
14	907	44·4	43·2	1·2	0·7	0·1	2		10·0	Id.; rain$^{0·5}$
15	900	44·0	43·0	1·0	0·1	0·0	1		10·0	Id.; rain^{1}
16	898	44·3	43·5	0·8	0·0	0·0	1	4 : — : —	10·0	Id.; rain^{1}
17	894	44·5	44·0	0·5	0·0	0·0	2	4 : — : —	10·0	Id.; rain$^{0·5—1}$
18	901	45·4	44·8	0·6	0·0	0·0	2	3 : — : —	10·0	Id.
19	887	47·0	45·9	1·1	0·0	0·0		4 : — : —	10·0	Id.; fair.
20	893	48·4	46·9	1·5	0·1	0·1	2		10·0	Id.
21	900	49·6	47·7	1·9	0·2	0·2	2		10·0	Id.; rain$^{0·2}$.
22	897	50·7	48·2	2·5	0·4	0·4	2	2 : — : —	10·0	Id.
23	905	52·0	49·2	2·8	0·5	0·2	3	2 : — : —	10·0	Id.
30 0	902	51·9	48·8	3·1	0·4	0·4	2	2 : — : —	10·0	Id.
1	901	53·4	49·6	3·8	0·3	0·2	3	2 : — : —	10·0	Id.
2	903	52·5	49·3	3·2	0·5	0·5	4		10·0	Id.
3	909	52·0	48·9	3·1	0·4	0·1	2		10·0	Id., approaching to cirro-strati to E.
4	908	51·2	48·1	3·1	0·5	0·0	3	2 : — : —	10·0	Id.
5	908	50·9	47·3	3·6	0·3	0·2	2	1 : — : —	10·0	Id.
6	916	51·1	47·7	3·4	0·5	0·2	3	2 : — : —	9·0	Id.
7	920	49·2	46·0	3·2	0·3	0·1	3	2 : — : —	3·5	Id.; streaks of linear cirri lying WNW. to ESE.
8	931	48·5	46·0	2·5	0·1	0·0	2		8·0	Id.
9	940	46·9	44·9	2·0	0·0	0·0	2		10·0	Id.
10	942	46·1	44·2	1·9	0·0	0·0	2		10·0	Id.
11	938	45·7	44·0	1·7	0·0	0·0			10·0	Id.
12	941	45·3	43·3	2·0	0·0	0·0	2		10·0	Id.
13	29·944	45·3	43·2	2·1	0·0	0·0			10·0	Scud.
14	946	45·1	43·5	1·6	0·0	0·0			10 0	Id.
15	934	45·1	43·6	1·5	0·0	0·0			10·0	Id.
16	937	44·7	42·9	1·8	0·1	0·1	3		10·0	Id.
17	946	44·5	42·9	1·6	0·1	0·0			10·0	Id.
18	953	45·0	43·4	1·6	0·0	0·0		4 : — : —	10·0	Id.
19	964	45·4	44·7	0·7	0·0	0·0	2	3 : — : —	10·0	Id.; rain^{1}
20	962	47·0	45·2	1·8	0·2	0·2	5	3 : — : —	10·0	Id.; rain$^{0·5}$
21	955	47·9	46·0	1·9	0·2	0·1	3	3 : — : —	10·0	Id.; rain$^{0·5}$
22	952	48·9	46·5	2·4	0·3	0·1	3		10·0	Id.; rain$^{0·5}$
23	950	49·0	47·0	2·0	0·3	0·1	3		10·0	Id.; rain$^{0·2}$
31 0	954	51·6	48·4	3·2	0·3	0·1	5	3 : — : —	10·0	Id.
1	944	53·3	50·2	3·1	0·3	0·2	8 v.	3 : — : —	9·9	Id.
2	946	53·9	50·3	3·6	0·2	0·1	8	3 : — : —	10·0	Id.
3	935	54·1	50·1	4·0	0·2	0·1	4 v.	3 : — : —	9·8	Id.
4	924	52·0	49·1	2·9	0·2	0·1	4		10·0	Id.
5	920	51·6	48·8	2·8	0·1	0·1	4		10·0	Id.
6	918	49·8	47·3	2·5	0·0	0·0			10·0	Id.
7	914	49·0	47·0	2·0	0·0	0·0			10·0	Id.
8	918	48·0	46·0	2·0	0·0	0·0			10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

May 31d 0h. The vane having been moving stiffly, it was slightly altered and oiled.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
31	9	29·926	46·8	45·2	1·6	0·0	0·0			10·0	Scud.
	10	934	46·3	45·0	1·3	0·0	0·0			10·0	Id.
	11	922	45·3	44·7	0·6	0·0	0·0			10·0	Id.
	12	921	45·6	43·8	1·8	0·0	0·0			10·0	Id.
	13	29·926	45·0	43·2	1·8	0·0	0·0			10·0	Scud.
	14	923	44·2	42·8	1·4	0·0	0·0			10·0	Id.
	15	904	44·2	43·0	1·2	0·0	0·0			10·0	Id.
	16	909	44·0	42·4	1·6	0·0	0·0			10·0	Id.
	17	907	43·5	42·2	1·3	0·0	0·0	2		10·0	Id.
	18	909	43·8	42·4	1·4	0·0	0·0	3		10·0	Id.; rain$^{0·2}$
	19	914	44·3	42·6	1·7	0·0	0·0	4	4 : — : —	10·0	Id.
	20	915	46·7	44·6	2·1	0·0	0·0		4 : — : —	10·0	Id.
	21	906	48·8	45·8	3·0	0·0	0·0	4	4 : — : —	10·0	Id.
	22	902	50·1	47·1	3·0	0·0	0·0		4 : — : —	10·0	Id.
	23	894	52·7	49·3	3·4	0·0	0·0	4	4 : — : —	10·0	Id.
1	0	887	54·9	51·1	3·8	0·0	0·0	3	5 : — : —	9·7	Id.; clouds broken to W. and NW.
	1	882	55·5	51·4	4·1	0·0	0·0	6	5 : — : —	8·0	Id.; id.
	2	875	55·6	52·0	3·6	0·1	0·1	7	5 : — : —	4·0	Id.
	3	874	56·6	52·7	3·9	0·4	0·2	6	5 : — : —	4·0	Id.
	4	866	52·6	49·6	3·0	0·4	0·1	5	5 : — : —	3·0	Id.
	5	852	52·6	49·7	2·9	0·2	0·2	4	6 : — : —	3·0	Id.
	6	844	51·2	48·8	2·4	0·3	0·2	6	6 : — : —	9·7	Id.
	7	852	48·2	47·0	1·2	0·2	0·1	7		10·0	Id.
	8	858	48·0	46·7	1·3	0·1	0·1	4 v.		10·0	Id.
	9	862	47·5	46·2	1·3	0·1	0·0	7		10·0	Id.; rain$^{0·2}$
	10	864	46·2	45·5	0·7	0·0	0·0			10·0	Id.
	11	869	46·4	45·2	1·2	0·0	0·0	4		10·0	Id.
	12	871	46·8	45·7	1·1	0·0	0·0			10·0	Id.
	21½	29·841	...	...	...	0·0	0·0	4			
2	13	29·871	43·9	41·7	2·2	0·1	0·0			10·0	Densely clouded.
	14	873	43·6	41·5	2·1	0·0	0·0			9·8	A streak of sky on NE. horizon.
	15	867	43·3	41·4	1·9	0·0	0·0			9·8	Id.
	16	867	42·4	41·0	1·4	0·0	0·0		28 : — : —	9·8	Scud; cirri and cirro-strati to NE.
	17	866	43·1	41·7	1·4	0·0	0·0		28 : — : —	8·0	Id.; id.
	18	873	44·4	42·2	2·2	0·0	0·0			8·0	Id.; cirro-strati on horizon.
	19	879	46·3	43·4	2·9	0·0	0·0		4 : 29 : 28	5·0	Id.; cirro-cumulo-strati; cirri; solar halo.
	20	886	48·5	44·3	4·2	0·0	0·0	8	1 : — : —	9·0	Id.; cirrous haze over the sky; solar halo.
	21	885	51·5	46·5	5·0	0·0	0·0	9	30 : — : —	10·0	Id.
	22	880	53·1	47·7	5·4	0·0	0·0	9	28 : — : —	10·0	Id.
	23	873	53·5	48·1	5·4	0·0	0·0	0 v.	26 : — : —	8·0	Id.; loose cumuli on horizon.
3	0	866	55·0	49·0	6·0	0·0	0·0		30 : 26 : —	7·0	Scud in two currents; cumuli on horizon.
	1	859	57·0	50·2	6·8	0·0	0·0			3·5	Very thin clouds in zenith; cumuli on horizon.
	2	860	59·9	52·3	7·6	0·0	0·0	14	26 : — : —	3·5	Scud and loose cumuli.
	3	846	60·1	52·3	7·8	0·0	0·0	15	25 : — : —	6·0	Scud; loose cumuli on horizon.
	4	842	65·4	56·4	9·0	0·0	0·0	20	25 : — : —	8·0	Scud and cumuli.
	5	832	62·3	53·7	8·6	0·1	0·0	19	25 : — : —	8·0	Id.; cirrous haze on horizon.
	6	823	61·2	53·8	7·4	0·0	0·0		25 : — : —	8·0	Id.
	7	825	57·9	52·1	5·8	0·0	0·0	30	25 : — : —	9·0	Id.; cirri, cirro-strati, cirrous haze.
	8	829	58·1	52·2	5·9	0·0	0·0	20	25 : — : —	8·0	Id.; cirri, cirrous haze.
	9	829	55·0	50·4	4·6	0·3	0·0	20	25 : — : 28	3·0	Scud; patches of woolly cirri; haze on horizon.
	10	837	50·3	47·8	2·5	0·0	0·0	22		1·0	Cirro-strati and cirrous haze to N.
	11	833	48·8	46·3	2·5	0·0	0·0	22		1·5	Id.
	12	833	44·9	44·0	0·9	0·0	0·0			1·0	Id. on horizon.
	13	29·835	42·0	41·8	0·2	0·0	0·0			1·0	Cirro-strati and cirrous haze on hor.
	14	819	42·8	42·0	0·8	0·0	0·0			1·5	Id.; very hazy on hor.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

June 2d 19h. Scud in loose rounded masses, moving very slowly, moving in eddies at 19h 25m.

Gött. Mean Time.	Baro-meter at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
3 15	29·817	43·0	42·2	0·8	0·0	0·0	19	28 : — : —	1·5	Patches of scud; cirro-strati and cirrous haze.
16	808	41·0	40·7	0·3	0·0	0·0	20	27 : — : —	3·5	Scud, smoky scud; cirro-strati to NE., tinged with red.
17	796	41·7	41·2	0·5	0·0	0·0		— : 26 : —	8·0	Cirro-cumulo-strati; cirro-strati, cirrous haze; foggy.
18	786	46·1	45·0	1·1	0·0	0·0		26 : — : —	9·7	Scud and loose cumuli; haze.
19	795	49·9	47·8	2·1	0·0	0·0	20	21 : — : —	10·0	Loose scud; hazy; nearly homogeneous.
20	798	52·1	50·4	1·7	0·0	0·0	20		10·0	As before; rather more homogeneous.
21	787	54·0	52·1	1·9	0·1	0·1	20	20 : — : —	10·0	Misty scud.
22	777	55·4	52·9	2·5	0·6	0·3	18	20 : — : —	10·0	Id.
23	772	59·2	55·8	3·4	1·0	0·6		20 : — : —	10·0	Id.
4 0	747	62·6	58·0	4·6	1·0	0·8	18	21 : — : —	9·5	Scud and loose cumuli; very hazy; sultry.
1	716	65·8	57·8	8·0	2·0	2·0	18	21 : — : —	7·0	Id.; id.
2	709	65·7	56·9	8·8	2·7	1·7	19	22 : — : —	8·0	Id.; linear cirri, cirrous haze.
3	712	66·7	57·0	9·7	2·2	1·8	20	24 : — : —	9·0	Id.; cirrous haze, cirro-strati.
4	712	61·0	54·4	6·6	1·9	1·3	24	24 : — : —	9·8	Id.; id.
5	703	61·2	55·0	6·2	0·7	0·9	21	24 : — : —	9·9	Id.; haze; cirro-strati to S.
6	701	58·9	53·7	5·2	1·4	1·6	20	24 : — : —	10·0	Id.; id.; id.
7	697	58·3	53·5	4·8	2·0	1·0	20	24 : — : —	10·0	Id.; id.; id.
8	694	56·6	53·2	3·4	1·3	0·8	20	24 : — : —	8·5	Scud; woolly and linear cirri.
9	703	54·7	52·0	2·7	1·0	0·5	20	— : — : 24	7·5	Cirri; cirro-cumuli, scud, cirrous haze.
10	700	53·2	51·0	2·2	0·5	0·3	22	24 : — : —	9·2	Scud; cirro-strati, cirrous clouds; haze.
11	704	52·5	50·8	1·7	0·4	0·1	21	24 : — : —	9·8	Id.; id.; id.; id.
12	702	50·5	49·5	1·0	0·1	0·0			9·2	Scud and cirrous clouds; sky hazy.
13	29·690	50·0	49·1	0·9	0·0	0·0			9·8	Scud and cirrous clouds.
14	671	50·5	49·7	0·8	0·0	0·0	20	20 : — : —	10·0	Scud.
15	654	52·0	51·0	1·0	0·0	0·0	20	20 : — : —	10·0	Id.
16	637	51·0	50·0	1·0	0·1	0·0	20	20 : 20 : —	9·8	Thin scud; cir.-cum., cir.-str.; woolly cirri, cir. haze.
17	618	51·6	50·5	1·1	0·0	0·0	20	19 : — : —	10·0	Scud; id., id.; a few drops of rain.
18	610	53·5	51·8	1·7	0·0	0·1	17	18 : 24 : —	10·0	Id.; cirrous clouds; clouds thicker; drops of rain.
19	595	53·0	52·7	0·3	0·1	0·0	16		10·0	Id.; $\text{rain}^{2\cdot5}$
20	575	55·3	54·0	1·3	0·3	0·2	15		10·0	Id.; cirro-strati to S.; $\text{rain}^{2\cdot0}$
21	565	56·7	55·2	1·5	0·3	0·1	15	18 : — : —	10·0	Id.; rain^{2}
22	548	55·2	53·4	1·8	0·5	0·3	15		10·0	Id.; id.
23	523	55·7	54·4	1·3	0·6	0·1	15	17 : — : —	10·0	Id.
5 0	500	60·2	57·7	2·5	0·9	0·6	19	19 : — : —	10·0	Id.
1	491	62·0	59·2	2·8	1·1	1·5	18	19 : — : —	10·0	Id.; cirri and cirro-strati to S.
2	489	61·2	58·8	2·4	1·1	1·1	18	18 : — : —	10·0	Id.
3	491	60·8	58·0	2·8	1·4	0·9	18		10·0	Id.
4	475	60·4	57·2	3·2	2·5	1·4	20		10·0	Id.; cirro-strati to S.
5	468	61·9	58·7	3·2	2·3	0·9	17	19 : 20 : —	9·9	Id.; cirro-cumulo-strati; cirro-strati.
6	457	60·9	58·1	2·8	1·7	0·4	18	18 : 20 : —	9·8	Id.; id.
7	453	60·8	58·1	2·7	0·4	0·6	18	19 : 20 : —	9·9	Id.; id.
8	453	60·2	56·9	3·3	0·9	0·3	18	19 : 20 : —	10·0	Id.; id.; rain^{1-2}, drops large.
9	451	58·3	56·4	1·9	0·5	0·3	18		10·0	Id.; id.; rain^{1} since 8^{h}.
10	452	57·3	55·4	1·9	0·3	0·4	19		10·0	Id.; id.; rain^{1}
11	437	56·3	54·6	1·7	0·2	0·2	20		10·0	Id.; cirro-strati.
12	436	54·9	53·7	1·2	0·4	0·0			10·0	Id.; id.
13	29·430	53·7	53·1	0·6	0·0	0·0			10·0	Scud; cirro-strati.
14	421	54·3	53·2	1·1	0·0	0·0			10·0	Id.; id.
15	399	53·7	52·9	0·8	0·0	0·0			10·0	Id.; id.
16	388	54·2	52·9	1·3	0·1	0·0	16	— : 17 : —	10·0	Cirro-strati and cirrous clouds; scud.
17	377	55·7	54·0	1·7	0·4	0·1	17	19 : — : —	10·0	Scud; cirro-strati and cirrous clouds.
18	372	56·3	54·2	2·1	0·2	0·2	16	19 : — : —	10·0	Id.; id.
19	367	56·8	54·9	1·9	0·7	0·4	16	18 : 17 : —	10·0	Id.; id.
20	365	60·4	57·1	3·3	0·8	1·0	16		9·9	Id.; id.; drops of rain.
21	369	59·3	56·3	3·0	0·6	0·6	17	18 : — : —	10·0	Id.; a few drops of rain.
22	357	64·6	59·8	4·8	0·8	0·4	17	17 : 17 : 17	9·5	Scud, cumuli, cirri, cirro-strati, cirrous haze.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

June 3^{d} 22^{h}. Anemometer altered; a small additional weight applied so as to keep the inverted vessel from touching the bottom of the cistern; it is believed that in the previous state the indications below 1 lb. were slightly too small.

Gött. Mean Time.	Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
5 23	29·349	66·5	61·0	5·5	1·1	0·6	17	18 : — : —	9·9	Scud, cumuli ; cirri to W.
6 0	352	68·6	62·6	6·0	0·9	0·3	16	18 : — : 18	9·0	Cumuli, scud, and diffuse cirri.
1	348	67·2	60·5	6·7	1·0	0·6	20	18 : — : 18	9·2	Id., id., id.
2	344	67·2	61·1	6·1	0·6	0·3		18 : — : 18	9·9	Id., id., id.
3	342	66·7	60·4	6·3	0·4	0·3	18	18 : — : 18	9·5	Id., id., id.
4	338	68·6	62·1	6·5	0·4	0·2	19		9·5	Id.
5	334	65·3	60·4	4·9	0·4	0·0	24		9·0	Id. ; cirri and cir.-str. to NE. [electric looking.
6	332	66·6	60·7	5·9	0·5	0·8	20	18 : — : —	6·0	Id., scud ; large piles of cum. and cum.-str. ; clouds
7	343	64·0	59·2	4·8	0·9	0·4	18	20 : — : —	3·0	Masses of loose cumuli ; large piles of cum.-str. to E.
8	356	61·5	57·4	4·1	0·6	0·2	19	— : — : 24	2·0	Patches of cirri ; cirro-strati and cumulo-strati on hor.
9	376	57·5	55·4	2·1	0·5	0·1	18		2·0	Cir.-cum. scud ; cir.-str. ; cum.-str. ; patches of cirri.
10	380	55·5	53·9	1·6	0·2	0·1	17	— : 22 : —	3·0	Id. ; id.
11	384	55·0	53·8	1·2	0·4	0·1			9·0	Thick scud to W. ; cumuli and scud to E.
12	390	56·0	54·4	1·6	0·2	0·2	21		9·6	Scud.
13	29·386	56·0	54·3	1·7	0·3	0·1	20		9·0	Scud ; sky to NE. and in zenith.
14	391	55·5	53·2	2·3	0·4	0·3	18	20 : — : —	10·0	Id.
15	391	55·1	53·9	1·2	0·6	0·2		24 : 24 : —	9·5	Loose scud moving rapidly ; denser scud, slowly.
16	382	55·4	53·9	1·5	0·7	0·4	20	22 : — : —	10·0	Scud ; cirri and cirro-strati. [of rain.
17	405	55·3	53·3	2·0	0·3	0·2	18	22 : — : —	10·0	Id. ; id. radiating from NW. ; drops
18	413	55·2	53·2	2·0	0·2	0·1	20	20 : — : —	10·0	Id. ; id. ; rain¹ at $18^h\ 20^m$.
19	407	58·0	55·3	2·7	0·3	0·4	18	19 : 22 : —	10·0	Id. ; cirro-strati and cirrous clouds.
20	410	58·1	55·6	2·5	1·8	1·0	18	20 : — : —	10·0	Id. ; cirro-strati. [slowly.
21	422	63·4	58·6	4·8	2·4	0·9	19	20 : 20 : —	9·5	Loose scud moving quickly ; cum.-str. and cirro-strati,
22	418	58·9	55·7	3·2	1·4	0·5	19	19 : — : —	10·0	Scud.
23	404	63·0	57·4	5·6	1·3	1·5	20	19 : — : —	9·8	Id. ; cirro-strati.
7 0	394	66·4	59·6	6·8	1·3	0·3	18	17 : — : —	9·9	Id. ; id.
1	375	65·7	59·4	6·3	1·1	1·3	15	18 : — : —	10·0	Id. ; id.
2	360	65·7	59·6	6·1	1·3	0·7	16	18 : — : —	10·0	Id. ; id. [looking to S. and NW.
3	335	65·3	58·6	6·7	1·5	2·2	15	15 : — : —	10·0	Thick dark scud ; dense cir.-str. and cir. haze ; electric
4	312	58·0	56·6	1·4	2·2	0·4	14		10·0	Dense mass of scud and cir.-str. ; $rain^{2-4}$ since $3^h\ 20^m$.
5	291	58·2	57·8	0·4	1·0	0·3	17	18 : — : —	10·0	Loose smoky scud ; $rain^{2-4}$
6	282	56·8	56·1	0·7	2·0	0·8	17	20 : — : —	10·0	Id. ; $rain^{0·5}$
7	274	57·8	57·0	0·8	1·4	0·2	18	20 : — : —	10·0	Scud ; $rain^{1·5}$
8	270	56·6	55·7	0·9	0·8	0·2	17	20 : — : —	10·0	Id. ; rain¹
9	263	56·3	55·2	1·1	0·9	0·7	18		10·0	Id. ; rain¹ at intervals.
10	263	55·2	54·8	0·4	1·1	0·1	20		10·0	Id. ; id.
11	283	55·7	54·7	1·0	0·4	0·2	20		9·5	Id.
12	319	56·2	54·9	1·3	0·2	0·0	20	20 : — : —	10·0	Id.
13	29·356	56·7	54·7	2·0	0·9	0·6	20		10·0	Scud.
14	411	56·6	53·8	2·8	1·0	1·0	22	24 : — : —	9·8	Id. ; rain² about $13^h\ 55^m$.
15	440	55·4	53·3	2·1	1·2	0·3	22	24 : — : —	9·0	Thin smoky scud ; cirro-strati, nearly stationary.
16	458	54·2	52·3	1·9	0·8	0·6	20	25 : — : —	2·5	Scud ; id.
17	497	54·2	52·2	2·0	0·6	0·2	20	25 : — : —	1·5	Id. ; id.
18	529	55·0	52·7	2·3	0·5	0·4	22	25 : — : —	6·0	Id.
19	549	57·8	56·0	1·8	0·4	0·3	22	23 : — : —	8·0	Id. ; cumuli and cirro-strati to S.
20	571	58·9	55·2	3·7	0·8	0·2	20		9·0	Id. ; id. SE. and NE.
21	601	58·3	55·2	3·1	0·6	0·6	19	22 : — : —	10·0	Id.
22	626	59·8	55·2	4·6	0·5	0·9	24	22 : — : —	9·5	Id.
23	640	65·0	57·4	7·6	1·3	1·7	20	20 : — : —	5·0	Scud and loose cumuli ; woolly and linear cirri.
8 0	644	66·7	57·2	9·5	1·4	1·3	19	— : — : 22	8·0	Woolly cirri ; scud and loose cumuli on horizon.
1	655	67·5	59·2	8·3	1·8	2·0	20	23 : — : —	2·5	Scud ; cirri and cirrous haze ; cumuli on horizon.
2	664	66·5	58·8	7·7	2·3	0·1	19	23 : — : 23	3·0	Scud and loose cumuli ; varieties of cirri.
3	675	67·2	59·1	8·1	2·0	2·0	20	22 : — : —	2·0	Id. ; cirri and cirrous haze on hor.
4	683	66·2	58·2	8·0	2·4	1·8	20		2·0	Id. ; id.
5	680	64·0	56·0	8·0	2·5	1·6	19	— : — : 20	3·0	Diffuse cirri ; patches of scud ; cumuli ; cirrous haze.
6	677	62·2	56·0	6·2	1·1	1·4	20	— : — : 20	8·0	Id., cirrous haze, cirro-strati ; faint solar halo.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

June $7^d\ 14^h$. Observation made at $14^h\ 15^m$.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1^h.	10^m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
8	7	29·672	59·9	54·7	5·2	1·5	1·0	20	19 : — : —	10·0	Scud; thick cirrous clouds.
	8	671	58·3	53·7	4·6	1·2	0·2	19	19 : — : —	10·0	Id.; id.
	9	671	56·7	52·2	4·5	0·7	0·1	18	— : 18 : —	10·0	Cirro-stratous scud; dense cirro-strati.
	10	678	56·3	52·3	4·0	0·5	0·2	18	— : 18 : —	10·0	Id.; id.
	11	676	53·7	51·1	2·6	0·2	0·5	19	20 : — : —	7·0	Scud; cirrous clouds.
	12	665	54·8	51·2	3·6	1·6	1·1	18	20 : — : —	9·5	Id.
	22	29·656	...	...	...	1·3	...	20			
9	13	29·609	52·9	51·0	1·9	2·5	0·1	15		3·0	Scud and cirro-strati on horizon.
	14	606	51·7	50·9	0·8	0·5	0·2			2·0	Cirro-strati to E.; scud to S.
	15	606	51·1	50·0	1·1	0·3	0·2	18	18 : — : —	4·0	Scud and loose cumuli; cirri and cirro-strati to E.
	16	603	50·6	49·9	0·7	0·3	0·3	17		2·0	Cirro-strati, tinged with red.
	17	619	50·0	48·9	1·1	0·3	0·4	17		2·5	Woolly cirri to S.; scud on Cheviot; cirro-strati.
	18	629	50·0	48·7	1·3	0·3	0·1			2·0	Id.; id.; id.
	19	625	52·8	50·1	2·7	0·4	0·3	19	20 : — : —	1·5	Scud and cumuli; patches of cirro-strati.
	20	625	54·0	50·4	3·6	0·7	0·6	17	20 : — : —	2·0	Id.
	21	614	56·1	50·2	5·9	1·3	0·8	18	21 : 19 : —	7·0	Id.; cir.-cum.-str.; cum. and cum.-str.
	22	610	60·0	53·5	6·5	1·7	1·6	18	21 : 18 : —	8·0	Id.; woolly cirri and cirro-strati.
	23	607	61·6	53·8	7·8	1·0	1·0	18	21 : — : —	9·0	Id.; cirrous clouds.
10	0	599	63·7	55·2	8·5	2·1	2·3	19		9·0	Scud and loose cumuli; shower$^{0·5}$
	1	621	53·7	50·8	2·9	2·4	0·9	21		10·0	Dense cir.-str. and scud; shower^{6} at $0^h\ 40^m$; rain^{2}
	2	609	61·0	56·0	5·0	0·9	0·4	24	23 : — : —	9·5	Scud and loose cumuli; woolly cirri and cirro-strati.
	3	615	57·4	52·0	5·4	1·5	0·5	22	24 : — : —	9·5	Id.; cir.-str. and cir. haze; showers.
	4	615	61·5	53·2	8·3	1·1	1·4	24	23 : — : —	9·5	Id.
	5	624	60·1	51·7	8·4	1·9	1·3	22	23 : — : —	7·5	Id.; cirro-strati to E.
	6	637	59·3	52·3	7·0	1·6	0·4	24	23 : — : —	5·0	Id.; fine cumuli to NE.
	7	651	58·5	52·0	6·5	1·8	1·1	23		2·0	Id.; cirro-strati and cumulo-strati.
	8	679	54·7	48·9	5·8	1·5	1·2	22	24 : — : —	1·5	Id.; cirro-strati to E.
	9	709	51·0	46·5	4·5	1·7	0·7			0·7	Scud and cirro-strati on E. horizon.
	10	726	50·0	45·8	4·2	0·2	0·1	22		0·2	Id.
	11	752	47·8	44·7	3·1	0·3	0·2	22		0·5	Id.
	12	760	45·8	43·6	2·2	0·3	0·1		24 : — : —	0·3	Patches of scud.
	13	29·771	44·8	42·8	2·0	0·1	0·1			0·1	Patches of scud; strong twilight.
	14	781	42·9	41·7	1·2	0·4	0·0	20		0·2	Id.
	15	781	44·9	42·8	2·1	0·5	0·4	20		0·2	Cirrous-haze to E.; scud to S.
	16	797	43·2	41·8	1·4	0·6	0·2	18	26 : — : —	0·5	Id.; scud.
	17	812	47·2	43·9	3·3	0·5	0·5	19	26 : 28 : —	0·5	Scud; semifluid-like cirro-cumuli.
	18	826	46·8	44·8	2·0	0·3	0·3	18	26 : — : —	0·5	Id.
	19	834	51·0	48·0	3·0	0·2	0·2	18	25 : — : —	2·0	Id.; cirri to W.; haze on E. horizon.
	20	844	52·9	49·0	3·9	0·2	0·2	23	24 : — : —	3·5	Id.; cirri and cirro-strati; cumuli to SE.
	21	847	56·5	51·2	5·3	0·6	0·3	21	22 : 26 : —	9·0	Loose smoky scud; thicker scud.
	22	855	57·5	51·2	6·3	0·9	0·5	23 v.	23 : — : —	9·0	Scud; cirri and cirro-strati; cumuli to N.
	23	861	60·8	52·7	8·1	1·1	0·5	23		9·0	Id.; id.
11	0	862	62·9	54·3	8·6	0·9	0·2	25	24 : — : —	9·0	Scud and loose cumuli; cirro-strati and cirro-cumuli.
	1	866	64·9	55·3	9·6	1·0	0·6	20	— : 24 : —	8·5	Cirro-cumuli; scud and loose cum.; cirri, cirro-strati.
	2	865	65·9	56·7	9·2	0·8	0·6	20	24 : — : —	9·0	Scud and loose cumuli.
	3	865	63·2	55·3	7·9	0·9	0·2	22	23 : — : —	9·0	Id.
	4	861	64·8	56·8	8·0	1·6	1·5	19	22 : 25 : —	9·8	Scud; scud and cumuli; cirrous haze; wild sky.
	5	870	61·5	55·3	6·2	2·2	1·7	22 v.	24 : — : —	10·0	Id.; cumuli, cirro-strati, and cirrous haze.
	6	856	61·0	55·2	5·8	1·2	1·8	20	22 : 24 : —	9·8	Id.; bands of cirro-strati, cirrous haze; drops of rain.
	7	856	58·9	54·2	4·7	1·9	0·7	19		9·5	As before.
	8	855	57·0	51·9	5·1	0·7	0·1	19		9·2	Id.
	9	848	55·0	51·2	3·8	0·4	0·4	19		9·5	Cirro-strati, woolly and cymoid cirri; scud on hor.
	10	844	54·8	51·0	3·8	0·7	0·6	18		10·0	Id.
	11	832	53·0	50·6	2·4	1·0	0·2	19		10·0	Id.; rain$^{0·5}$
	12	835	52·2	50·8	1·4	0·2	0·1	20		10·0	Id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

June $10^d\ 12^h\ 50^m$. (Midnight.) The observer found that he could read print from types 0·1 inch deep with considerable ease; Moon not risen.

Gött. Mean Time.	Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
11 13	29·801	51·5	50·9	0·6	0·2	0·3	19	20 : — : —	7·5	Scud.
14	786	53·0	51·9	1·1	0·9	0·2	19		10·0	Id.; rain$^{0·2}$
15	766	51·7	51·3	0·4	0·8	0·2	16	20 : — : —	10·0	Id.
16	754	53·0	52·3	0·7	0·7	0·4	20	22 : — : 25	4·0	Scud and loose cumuli; cirri.
17	766	53·0	51·6	1·4	0·4	0·1	16	21 : — : —	3·0	Id.; woolly cirri.
18	774	52·7	49·7	3·0	0·4	0·4	20		3·0	Id.; id.
19	788	53·1	48·7	4·4	0·8	0·5	23	21 : — : 26	5·0	Scud; woolly cirri.
20	782	54·0	48·9	5·1	0·9	0·5	23	22 : — : —	2·0	Id.; cirri to E.
21	773	55·8	50·1	5·7	1·0	0·4	21		1·5	Cirri, cirrous haze; patches of scud to N.
22	786	59·5	52·9	6·6	0·9	0·7	21	— : — : 26	2·0	Woolly and curled cirri; patches of scud.
23	795	62·3	54·2	8·1	0·9	0·5	22		1·5	Id.; id.
12 0	767	64·8	56·8	8·0	0·6	0·6	22	— : — : 25	4·0	Cirri and cirrous haze over the sky; solar halo.
1	755	66·8	57·2	9·6	0·8	0·7	20	— : — : 24	5·0	Cirri; cirro-strati, loose cumuli, scud; faint halo.
2	740	66·5	57·2	9·3	1·6	0·6	21		9·8	Cirri and cirrous haze, cir.-str.; patches of scud; halo.
3	736	66·9	58·0	8·9	1·4	0·4	20		10·0	Id., id.; halo gone.
4	727	60·8	52·7	8·1	1·2	0·3	22	— : 24 : —	10·0	Cir.-str. scud; scud, cirri, cir. haze; drops of rain at 4½h.
5	703	60·0	53·9	6·1	0·9	0·7	20	20 : — : —	10·0	Patches of scud; dense mass of cirro-strati.
6	670	59·9	56·3	3·6	1·0	1·2	20	20 : — : —	10·0	Loose scud; dense cirro-strati and cirrous haze.
7	674	57·4	54·4	3·0	1·7	0·8	20		10·0	As before; at 6h 45m barometer 29·679.
8	633	57·2	54·4	2·8	1·5	1·4	18	19 : 22 : —	9·5	Loose scud; cirro-strati, cirro-cumuli; woolly cirri.
9	611	57·0	54·3	2·7	1·0	1·6	18	20 : — : —	10·0	Scud; cirrous clouds; occasional showers^{1}
10	605	56·4	54·1	2·3	1·6	0·5	18	20 : — : —	10·0	Id.; id. rain^{1}
11	554	54·2	52·2	2·0	1·4	1·3	19		10·0	Id.; wild-looking sky; showers$^{1·5}$ since 10h.
12	525	54·5	52·3	2·2	2·3	1·3	22	22 : — : —	9·5	Id.; a few stars visible in zenith.
13	29·497	54·9	53·2	1·7	2·3	2·2	20		10·0	Scud; rain^{1} commencing.
14	486	55·0	53·0	2·0	3·0	1·2	20		10·0	Id.; fair.
15	469	54·9	53·9	1·0	2·2	1·0	20	22 : — : —	10·0	Id.
16	438	55·0	53·7	1·3	1·5	0·9	20	21 : — : —	10·0	Id.; cirri, tinged with red to E.
17	415	56·8	54·0	2·8	1·6	1·0	20	21 : — : —	10·0	Id., moving rapidly.
18	408	56·2	54·7	1·5	2·2	1·2	19	21 : — : —	10·0	Id., id.
19	410	57·0	56·0	1·0	1·6	1·5	19	20 : — : —	10·0	Loose scud.
20	390	62·1	59·1	3·0	2·6	1·7	19	20 : 22 : —	9·0	Id.; woolly cirro-cumuli.
21	372	63·2	60·5	2·7	2·8	1·7	19	22 : — : —	9·8	Scud; a few drops of rain.
22	359	61·6	60·3	0·3	3·5	2·7	19		10·0	Id.; cirro-strati, cirro-cumuli; light rain.
23	343	63·9	61·0	2·9	3·1	1·7	19	21 : — : —	10·0	Id.
13 0	331	68·1	61·9	6·2	4·2	4·3	20	22 : — : —	7·0	Scud and loose cumuli; patches of cirri.
1	342	62·0	59·3	2·7	3·3	2·3	20	22 : — : —	8·5	Id.; rain$^{3-6}$ since 0h.
2	333	67·8	59·1	8·7	4·4	4·0	21	22 : — : —	3·5	Loose cumuli.
3	339	64·7	57·5	7·2	4·1	2·6	21	22 : — : —	3·0	Scud and cumuli; cirrous-crowned clouds to NW.
4	371	61·4	56·2	5·2	5·5	3·9	21	24 : — : —	2·5	Id.
5	387	61·0	54·9	6·1	4·2	2·9	22	24 : — : —	3·0	Ranges of cumuli and scud.
6	392	59·8	53·7	6·1	4·8	2·2	25		2·0	Scud and loose cumuli on horizon.
7	410	57·7	51·7	6·0	3·7	1·6	20	24 : — : —	1·5	Scud and loose cumuli.
8	422	56·5	50·9	5·6	3·5	1·1	21	24 : — : —	8·0	Id.; cirro-strati. [8½h.
9	411	53·0	49·7	3·3	2·0	1·3	20		1·0	Scud on hor.; two light showers since 8h; rainbow at
10	418	53·7	50·0	3·7	2·4	0·6	20	24 : — : —	8·0	Scud; rain.
11	413	53·0	49·7	3·3	1·2	1·0	20		9·0	Id.; a few drops of rain.
12	410	53·1	49·8	3·3	3·5	1·2	20	24 : — : —	8·0	Id.; wind in gusts.
13	29·397	53·6	49·8	3·8	2·6	1·5	22	24 : — : —	9·5	Scud; wind in gusts.
14	404	52·4	49·1	3·3	3·0	1·3	20	24 : — : —	2·0	Id.; id.; sky orange-coloured to E. at 14½h.
15	403	52·0	49·6	2·4	3·1	2·8	20	24 : — : —	7·5	Id.
16	401	52·3	49·3	3·0	2·4	2·7	20	24 : — : —	6·0	Id.
17	410	52·7	49·0	3·7	3·0	4·0	20	24 : — : —	5·0	Id.
18	416	53·4	49·7	3·7	2·8	3·3	20	24 : — : —	7·0	Id.
19	427	54·3	50·4	3·9	3·2	2·0	21	24 : — : —	9·0	Id.
20	447	56·0	51·3	4·7	2·9	4·8	23	24 : — : —	9·0	Scud and loose cumuli.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1^h.	10^m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0–10.	
13 21	29·464	57·0	51·6	5·4	5·2	5·9	24	24 : — : —	7·0	Scud and loose cumuli ; patches of cir.-str. and cirri.
22	465	57·9	52·9	5·0	6·4	4·4	24		9·0	Id.
23	475	58·1	53·0	5·1	4·8	3·8	23	24 : — : —	9·6	Scud.
14 0	498	59·2	53·2	6·0	4·7	3·5	23	25 : — : —	7·5	Id. ; cirri
1	510	61·3	54·4	6·9	5·3	3·9	25	24 : 25 : —	9·0	Scud in two currents.
2	522	59·4	54·2	5·2	5·4	3·3	26	25 : — : —	2·5	Scud and loose cumuli ; cirro-strati to S.
3	528	58·3	53·1	5·2	4·5	3·1	26		5·5	Id.
4	552	58·2	55·2	3·0	3·8	2·1	24		8·5	Id. ; drops of rain.
5	560	56·7	51·9	4·8	3·3	1·6	26		9·8	Scud ; rain[1]
6	568	57·0	52·0	5·0	3·1	1·2	25	25 : — : —	9·8	Scud and loose cumuli ; rainbow to E.
7	581	54·0	50·5	3·5	2·2	0·3	25		10·0	Id. ; showers ; rainbow.
8	573	52·1	49·7	2·4	1·2	1·0	23	25 : — : —	9·5	Thin scud ; very dense to E. and W. ; rain[1] ; rainbow.
9	568	52·3	48·1	4·2	1·8	0·5	22	25 : — : —	9·5	Scud ; raining to E. ; passing showers.
10	569	52·0	47·0	5·0	1·7	0·4	24	24 : — : —	9·9	Id. ; cirro-strati to N. ; showers since 9^h.
11	550	50·7	47·3	3·4	1·9	0·4	23		7·0	Id. ; cirro-strati above.
12	550	50·7	47·1	3·6	1·4	1·1	22		9·9	Thick scud.
13	29·527	51·3	47·7	3·6	1·8	1·5	24		9·0	Thick scud ; cirro-strati on horizon.
14	526	50·0	46·8	3·2	2·8	1·4	21	26 : — : —	4·0	Scud ; cirro-strati.
15	517	49·4	46·3	3·1	1·7	1·4	22	25 : — : —	1·5	Loose scud ; cirro-strati and woolly cirri.
16	......	...	...	...	...	...			......	
17	533	50·9	47·6	2·3	2·0	2·1	22	26 : — : —	3·0	Loose scud ; cirro-strati on horizon.
18	533	51·1	47·8	3·3	3·2	1·8	23	26 : — : —	2·0	Id. ; id.
19	537	53·0	49·0	4·0	3·3	3·5	26	26 : — : 28	2·0	Id. ; mottled cirri ; cirro-strati on horizon.
20	555	54·8	50·1	4·7	2·6	2·0	26	26 : — : 28	5·0	Id. ; id. id.
21	577	57·0	52·4	4·6	4·5	1·5	24	26 : — : 30	9·0	Id. ; woolly cirri ; cirro-strati to W.
22	598	55·8	50·2	5·6	2·3	2·0	25	26 : — : —	9·8	Scud ; cirri and cirro-strati.
23	617	56·2	51·1	5·1	2·3	2·1	24	26 : — : —	9·9	Id. ; id.
15 0	635	56·0	50·9	5·1	3·1	0·5	26	26 : — : —	9·8	Id. ; id.
1	659	56·2	51·0	5·2	1·5	1·2	25	28 : — : —	9·9	Id. ; cirri, cirro-strati, and cirrous haze.
2	666	56·7	51·2	5·5	1·8	1·3	25		9·9	Id. ; id.
3	673	57·8	52·1	5·7	2·6	2·3	25	28 : — : —	9·9	Id. ; cumuli, cirri, and cirro-strati.
4	696	56·2	50·7	5·5	2·3	0·9	26	27 : 26 : —	9·8	Patches of scud ; cirro-strati and cirrous clouds.
5	701	58·3	51·9	6·4	1·7	2·0	27		8·5	Id. ; id. [very slowly.
6	715	57·8	51·7	6·1	1·4	0·7	26	28 : 28 : —	9·0	Id. ; cir.-str., cir.-cum., and cirri moving
7	731	56·3	51·3	5·0	1·3	0·3	25	28 : 28 : —	8·0	Id. ; id.
8	742	53·8	49·0	4·8	1·0	1·0	25	28 : 28 : —	6·0	Id. ; id.
9	754	51·5	47·4	4·1	0·8	0·5	26		3·5	Id. ; id.
10	768	50·0	46·6	3·4	0·3	0·3	27	— : 31 : —	4·0	Cirro-cumulous scud.
11	772	48·0	45·0	3·0	0·2	0·1	28		5·0	Cirro-strati ; dense clouds to E. [the Sun.
12	788	46·0	44·0	2·0	0·2	0·1	24		1·0	Streaks of cirri to NE. very light, as if illuminated by
23	29·927	...	...	...	0·7	...	30			
16 7½	......	...	...	...	0·0	0·0	4	21 : — : —	......	Scud.
13	29·950	42·3	41·0	1·3	0·4	0·0			2·0	Cirri to NNE., tinged with red ; scud ; cirro-strati.
14	940	41·7	40·8	0·9	0·0	0·0	18		0·8	As before.
15	926	37·0	37·0	...	0·0	0·0	18		0·5	Id. ; heavy dew. [tinged with red.
16	926	37·8	37·3	0·5	0·0	0·0		— : 22 : —	7·0	Woolly cir.-cum. moving slowly ; cirri, cirro-strati, all
17	906	41·2	40·6	0·6	0·0	0·0	16	— : 22 : —	8·0	Large loose cirro-cumuli moving very slowly.
18	924	44·7	43·0	1·7	0·0	0·0			9·0	Cirro-cumulo-strati, lying in bands SW. to NE. ; cirri.
19	919	48·2	46·3	1·9	0·0	0·0		20 : — : —	9·5	Loose cirro-cumulous scud ; linear cirri, cirro-strati.
20	909	52·7	49·3	3·4	0·0	0·0		— : 23 : —	9·5	Large cirro-cumuli ; cirri and cirro-strati. [and S.
21	896	56·9	51·0	5·9	0·0	0·0		— : — : 24	9·5	Woolly cirri, cir. haze, cir.-str. ; masses of cum. to N.
22	878	58·6	53·1	5·5	0·1	0·0			9·8	Cirrous haze ; cumuli and cirro-strati on horizon.
23	868	60·3	53·3	7·0	0·1	0·0		22 : — : —	10·0	Scud ; cumuli, cirro-strati, cirrous haze ; rain[1]
17 0	854	60·3	54·9	5·4	0·1	0·0		18 : — : —	10·0	Masses of scud ; cir.-str. and cir. haze ; drops of rain.
1	844	60·2	55·7	4·5	0·0	0·0	17		10·0	As before ; rain[1] since 0^h.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

June $14^d\ 0^h$. Observation made at $0^h\ 5^m$.

June $14^d\ 11^h$. The index of the anemometer was found to have become shifted, so as to register the pressures 0·4 lb. too little ; it was now adjusted.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
17	2	29·833	57·9	54·0	3·9	0·0	0·0	23	18 : — : —	10·0	Scud ; rain$^{0\cdot5}$
	3	820	57·7	56·0	1·7	0·1	0·0	24	18 : — : —	10·0	Loose scud moving slowly ; dense uniform cirro-strati ; [rain^{2}
	4	804	56·8	54·7	2·1	0·0	0·0			10·0	Continuous rain^{2}
	5	796	55·3	54·0	1·3	0·0	0·0		17 : — : —	10·0	Scud ; rain$^{2-3}$
	6	783	53·5	52·8	0·7	0·0	0·0		16 : 15 : —	10·0	Scud in two currents ; rain^{2}
	7	759	52·1	51·9	0·2	0·0	0·0		6 : 12 : —	10·0	Low smoky scud ; thicker scud ; rain$^{3-5}$
	8	754	51·7	51·2	0·5	0·1	0·0	6	12 : — : —	10·0	Scud ; rain$^{2-3}$
	9	739	50·1	49·3	0·8	0·2	0·0	12	14 : — : —	10·0	Id. ; id.
	10	728	49·3	48·9	0·4	0·2	0·0	6	14 : — : —	10·0	Id. ; id.
	11	720	49·3	49·0	0·3	0·1	0·0			10·0	Id. ; id.
	12	708	49·2	48·9	0·3	0·0	0·0			10·0	Rain$^{2-3}$
	13	29·680	48·9	48·7	0·2	0·0	0·0			10·0	Rain$^{2-3}$
	14	661	49·0	48·7	0·3	0·1	0·0	8		10·0	Rain^{1}
	15	642	49·0	48·6	0·4	0·0	0·0			10·0	Id.
	16	632	48·8	48·6	0·2	0·0	0·0	6	6 : — : —	10·0	Scud ; rain^{2}
	17	617	49·2	49·0	0·2	0·1	0·0		6 : — : —	10·0	Id. ; rain^{1}
	18	607	49·8	49·5	0·3	0·0	0·0		4 : — : —	10·0	Id. ; rain$^{0\cdot2}$
	19	597	50·7	50·5	0·2	0·0	0·0		4 : — : —	10·0	Id. ; id.
	20	588	51·6	50·7	0·9	0·1	0·0	4	6 : 20 : 16	10·0	Id. in two currents ; woolly cirri.
	21	583	55·2	53·2	2·0	0·1	0·0			10·0	Id. ; dense mass of cirro-strati.
	22	577	55·7	52·8	2·9	0·0	0·0			10·0	Id. ; rain$^{0\cdot2}$
	23	573	54·8	52·9	1·9	0·0	0·0	8	12 : — : —	10·0	Id. ; cirrous clouds ; rain^{1}
18	0	577	55·1	53·6	1·5	0·0	0·0		4 : — : —	10·0	Id. ; cirri and cirro-strati ; rain$^{0\cdot5}$
	1	581	54·7	52·7	2·0	0·2	0·0	15	12 : — : —	10·0	Id. ; continuous rain^{2}
	2	574	54·0	51·7	2·3	...	...		12 : — : —	10·0	Id. ; rain$^{0\cdot5-2}$
	3	570	51·5	51·3	0·2	...	...			10·0	Id. moving very slowly.
	4	563	53·3	51·8	1·5	...	...			10·0	Id., the motion not perceptible ; rain$^{2-4}$
	5	558	54·1	53·3	0·8	...	...		10 : 12 : —	10·0	Id. in two currents.
	6	562	51·7	51·4	0·3	...	...		12 : — : —	10·0	Id. ; rain^{3}
	7	568	51·7	51·4	0·3	...	...		12 : — : —	10·0	Id. ; rain^{2}
	8	572	51·7	51·2	0·5	...	...		12 : — : —	10·0	Id. ; rain^{1}
	9	582	51·3	50·6	0·7	...	...			10·0	Id. ; rain ceased.
	10	601	50·1	49·8	0·3	...	...			10·0	Id. ; rain^{1}
	11	606	49·5	49·2	0·3	...	...			10·0	Id. ; id.
	12	618	49·5	49·1	0·4	...	...			10·0	Id. ; id.
	13	29·626	49·0	48·8	0·2	...	...			10·0	Scud ; rain^{1}
	14	622	48·8	48·2	0·6	...	...			10·0	Id. ; id.
	15	633	48·3	47·9	0·4	...	...			10·0	Id. ; id.
	16	648	48·2	47·7	0·5	...	...		6 : — : —	10·0	Id. ; id.
	17	663	47·2	46·8	0·4	...	...			10·0	Id. ; rain$^{0\cdot5}$
	18	676	46·7	46·2	0·5	...	...		3 : — : —	10·0	Id. ; fair.
	19	687	48·0	47·0	1·0	0·2	0·2	3	3 : — : —	10·0	Loose scud ; thick cirro-strati.
	20	692	48·9	47·4	1·5	0·2	0·2	2	3 : — : —	10·0	Id. ; id.
	21	707	49·0	47·0	2·0	0·3	0·3	2	2 : — : —	10·0	Id. ; id.
	22	711	50·6	47·3	3·3	0·2	2·2	2	2 : 2 : —	10·0	Id. ; cirro-strati.
	23	718	52·7	48·7	4·0	0·4	0·2	1	1 : — : —	10·0	Id. ; id.
19	0	718	52·4	48·0	4·4	0·2	0·2	2	1 : — : —	10·0	Scud ; a few drops of rain.
	1	723	52·6	48·7	3·9	0·1	0·1	2	1 : — : —	10·0	Id. ; id.
	2	724	56·0	54·0	2·0	0·1	0·1	12	29 : 28 : —	9·7	Loose scud ; woolly cir.-cum.-str. ; shower since 1h.
	3	724	50·1	48·7	1·4	0·2	0·2	2	2 : 26 : —	10·0	Id. ; thicker scud ; slight shower.
	4	730	49·0	48·6	0·4	0·1	0·1	3		10·0	Rain^{3}
	5	711	50·6	48·7	1·9	0·0	0·0		6 : 26 : —	10·0	Loose scud moving variously ; thicker scud ; rain^{2}
	6	708	53·0	52·1	0·9	0·0	0·0		27 : — : —	9·0	Scud ; cirro-strati and cumuli on E. horizon.
	7	710	51·9	50·0	1·9	0·0	0·0			10·0	Id. ; shower since last observation.
	8	707	51·0	50·3	0·7	0·0	0·0			10·0	Id. ; rain^{2}
	9	723	50·3	49·5	0·8	0·0	0·0			10·0	Id. ; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

June 17d 17h. Observation made at 17h 15m.

June 18d 2h. The suspension cord of the inverted vessel of the anemometer broken ; readjusted at 19d 8h ; the pressures from 18d 19h till 19d 8h are estimated.

Gott. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
19	10	29·711	47·5	47·2	0·3	0·0	0·0		28 : — : —	10·0	Scud ; rain^{1}
	11	713	47·9	47·4	0·5	0·0	0·0		30 : — : —	9·7	Id.
	12	710	46·0	45·9	0·1	0·1	0·0			5·0	Id. ; cumuli to N. ; sky very clear.
	13	29·711	44·0	43·8	0·2	0·0	0·0			3·0	Scud ; heavy dew.
	14	717	41·9	41·9	...	0·0	0·0			2·0	Id. ; very clear towards the zenith.
	15	717	40·9	40·7	0·2	0·0	0·0			6·0	Scud.
	16	697	41·9	41·3	0·6	0·0	0·0			3·0	Id.
	17	694	40·8	40·2	0·6	0·0	0·0	20	20 : — : —	0·8	Patches of scud ; cumuli and cirro-strati to E.
	18	687	43·7	42·4	1·3	0·0	0·0	22	20 : — : —	0·5	Scud ; cirri and cirro-strati.
	19	680	46·9	44·4	2·5	0·3	0·4	22	24 : — : —	0·3	Id. ; cirri to E. ; wind commencing.
	20	672	49·7	45·9	3·8	1·0	0·6	22	25 : — : —	0·8	Id. ; cirri to S.
	21	672	51·7	46·4	5·3	0·7	0·4			2·5	Id. ; sky milky to E.
	22	649	53·6	47·1	6·5	0·5	0·2	25		2·0	Cirri to N. and W. ; loose cumuli on horizon.
	23	636	55·9	48·8	7·1	0·3	0·1	24	23 : — : 24	3·0	Thin scud ; woolly cirri ; loose cumuli on horizon.
20	0	627	58·4	51·3	7·1	0·3	0·1	28	23 : — : —	6·0	Scud and loose cumuli ; cirri and cirrous haze.
	1	619	62·6	55·0	7·6	0·5	0·2	16	22 : — : —	9·0	Scud ; cirro-strati and cirrous haze.
	2	613	60·1	54·0	6·1	0·7	0·4	20		10·0	Masses of scud ; dense mass of cir.-str. ; drops of rain.
	3	603	58·7	54·7	4·0	0·6	0·1	20		10·0	Id. ; id. ; rain^{2}
	4	589	58·2	54·7	3·5	0·2	0·1	20		10·0	Id. ; id.
	5	583	58·8	53·6	5·2	0·2	0·0			10·0	Scud and cirro-strati ; drops of rain.
	6	569	56·9	54·2	2·7	0·2	0·1			10·0	Id. ; rain$^{0\cdot2}$
	7	570	55·8	54·1	1·7	0·1	0·0			10·0	Id. ; id.
	8	569	55·7	53·9	1·8	0·1	0·0	18		10·0	A nearly uniform mass of scud.
	9	562	55·7	54·0	1·7	0·0	0·0		21 : — : —	9·5	Loose scud ; cirro-cumuli and cirrous clouds.
	10	555	54·8	53·7	1·1	0·0	0·0	20	23 : — : —	9·5	Cirro-cumulous scud ; cirri above.
	11	542	54·2	53·3	0·9	0·0	0·0			9·7	Scud ; cirro-cumuli and cirro-strati.
	12	522	54·2	53·7	0·5	0·0	0·0			10·0	Thick clouds ; at 12h 10m rain^{2}
	13	29·508	54·9	54·2	0·7	0·0	0·0			10·0	Rain^{2}
	14	491	54·3	53·8	0·5	0·0	0·0			10·0	Rain^{3}
	15	485	54·4	54·1	0·3	0·0	0·0			10·0	Rain$^{0\cdot2-0}$
	16	503	53·8	53·7	0·1	0·0	0·0	20	22 : — : —	10·0	Scud. [SE.
	17	512	53·2	53·0	0·2	0·0	0·0		23 : — : —	2·5	Loose scud ; cir.-cum.-str., cir.-str. ; low misty scud to
	18	514	54·4	53·8	0·6	0·2	0·0	24	22 : — : —	3·0	Loose cir.-cum. scud ; loose cum. and cir.-str. on hor.
	19	527	56·8	54·5	2·3	0·3	0·0	28	22 : — : —	8·5	Loose scud ; cirro-cumulo-strati ; linear cirri.
	20	522	59·0	55·3	3·7	0·3	0·1	28	22 : 20 : —	8·0	Id. ; id.
	21	531	57·0	56·0	1·0	0·3	0·3	23	23 : — : —	9·9	Scud ; cirro-strati and cumuli to N. ; rain^{1}
	22	540	61·1	58·0	3·1	0·4	0·3	19		9·9	Cirri and cirro-strati ; cirrous haze ; rain$^{0\cdot2}$
	23	537	59·3	57·3	2·0	0·4	0·4	21		10·0	Cirro-strati over the sky ; scud and loose cum. on hor.
21	0	533	63·8	59·3	4·5	0·5	0·4	18	22 : — : —	9·0	Scud ; woolly cirri.
	1	524	61·2	59·8	1·4	0·9	0·2	20		9·9	Id. ; id. ; rain^{1} since 0h. [looking.
	2	518	65·3	60·0	5·3	1·1	0·5	19	22 : — : 22	9·2	Scud and cumuli ; thick mottled woolly cirri ; stormy-
	3	506	63·9	58·3	5·6	1·3	0·8	19	21 : — : —	9·0	Id. ; thick cirro-strati above.
	4	502	64·4	58·7	5·7	1·1	1·1	19	21 : 21 : —	9·0	Id. ; cirro-cumulo-strati, cirrous haze.
	5	495	63·0	57·3	5·7	1·7	0·8	19		9·5	Thick cirro-strati and haze ; patches of scud.
	6	484	62·2	56·0	6·2	1·2	0·5	18	21 : — : —	10·0	Id., thicker ; patches of scud.
	7	482	59·7	56·0	3·7	1·0	1·5	18	20 : — : —	10·0	Scud ; thick cirro-strati and cirrous haze ; rain$^{0\cdot2}$
	8	477	56·0	53·0	3·0	0·8	0·3	19	20 : — : —	10·0	Id. ; id.
	9	472	54·1	52·4	1·7	0·6	0·1	20	19 : — : —	10·0	Loose scud ; dense cirro-strati ; rain^{1}
	10	455	53·8	52·8	1·0	0·1	0·0		20 : — : —	9·8	Id. ; id.
	11	446	52·3	51·1	1·2	0·1	0·0		— : 22 : —	6·0	Cirro-cumuli ; scud, cirro-strati, ragged-edged cumuli.
	12	437	51·9	49·8	2·1	0·5	0·2	18	22 : 24 : —	4·0	Thin scud ; thick scud, moving rapidly.
	13	29·420	50·9	49·7	1·2	0·1	0·0			9·9	Scud ; a band of light on S. and E. horizon.
	14	410	52·4	51·1	1·3	1·2	0·3		20 : — : —	9·0	Id.
	15	401	52·2	51·2	1·0	0·6	0·1	17	20 : — : —	8·5	Id. ; cirri, cirro-strati, and cirrous haze. [with red.
	16	399	52·9	52·0	0·9	0·4	0·0		20 : — : 21	8·0	Id. ; fine woolly cirri ; cir.-str. ; cirri to E., tinged

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

June 21d 11h. The observer conceived that he heard thunder at this time: it was afterwards ascertained that a thunder storm occurred on this night about 10 miles to ESE. of Makerstoun.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
21	17	29·398	54·9	53·5	1·4	0·4	0·1		20 : — : 21	9·0	Scud ; woolly cirri ; dense mass of clouds to N. and E. ;
	18	404	55·6	53·0	2·6	0·2	0·3	18	22 : 20 : —	7·0	Id. ; cir.-cum.-str. ; scud and loose cum. [rain^2
	19	410	56·8	54·7	2·1	0·6	0·4	18	20 : — : 20	7·0	Loose scud ; woolly and reticulated cirri.
	20	414	58·0	55·1	2·9	0·6	0·3	20	19 : — : —	4·0	Scud and loose cumuli ; patches of cirro-strati and cirri.
	21	416	59·0	55·4	3·6	0·8	0·3	20	19 : — : —	7·0	Id. ; id.
	22	422	62·5	56·4	6·1	1·4	1·2	19	20 : — : —	3·0	Scud and cumuli ; patches of cirri.
	23	427	63·9	57·7	6·2	1·2	0·6	19	20 : — : —	7·0	Id. ; cirro-strati.
22	0	429	63·9	57·4	6·5	0·8	1·1	18	22 : — : —	4·0	Id. ; patches of cirro-strati.
	1	436	65·1	57·8	7·3	1·0	1·0	18	22 : — : —	7·0	Id.
	2	445	66·7	57·6	9·1	1·4	1·2	21	20 : 22 : —	6·0	Id. ; cir.-cum.-str. ; patches of cirri.
	3	445	64·7	56·2	8·5	2·2	1·8	20	— : — : 22	7·0	Woolly cirri and cir. haze over the sky ; scud and cum.
	4	450	66·0	57·8	8·2	1·8	1·6	20	— : — : 22	7·0	Id. ; id.
	5	452	65·2	57·0	8·2	1·4	1·0	18	— : — : 21	6·0	Woolly cirri ; masses of cumuli ; portion of a halo.
	6	472	62·0	55·4	6·6	1·4	1·3	19	— : — : 22	6·0	Id. ; cum. to SE. and N. ; cirro-strati to E.
	7	489	61·0	55·0	6·0	1·2	1·0	21	— : — : 22	6·0	Varieties of cirri ; cirro-strati and cumuli.
	8	495	59·0	54·5	4·5	0·3	0·3	20	— : — : 22	5·0	Woolly cirri ; patches of scud.
	9	505	57·2	53·2	4·0	0·8	0·1	20	21 : — : —	8·0	Cirro-stratous scud ; woolly cirri and cirro-strati.
	10	518	55·2	52·3	2·9	0·2	0·0			7·0	Id. ; id.
	11	532	54·6	51·7	2·9	0·1	0·3	20		9·0	Id. ; id.
	12	534	54·9	51·0	3·9	0·1	0·0	20		9·8	Cirro-strati.
23	0	29·533	71·7	63·7	8·0	0·9	...	18			
	13	29·554	57·0	56·4	0·6	0·7	0·0			0·2	Cirri ; cirrous haze on horizon.
	14	548	55·6	55·2	0·4	0·0	0·0			0·2	Id. ; id.
	15	537	54·9	54·5	0·4	0·0	0·0			0·2	Id. ; id.
	16	531	53·0	52·8	0·2	0·0	0·0		— : 20 : 20	6·0	Woolly cirri, cir.-cum., cir.-str. ; cum. in haze to SE.
	17	528	54·9	54·0	0·9	0·0	0·0	0	— : 16 : 16	8·0	Cirri, cirro-strati, cir.-cum. ; cum.-str. to SE. ; strati on Cheviot.
	18	525	56·5	55·0	1·5	0·2	0·2	4	4 : 14 : —	9·7	Thin scud ; thicker scud ; cumuli, cum.-str., cir.-str.
	19	515	58·3	56·4	1·9	0·2	0·2	2	4 : 13 : —	9·8	Id. ; ragged cum., cum.-str. ; cir.-str., cir. haze.
	20	512	61·2	58·9	2·3	0·2	0·1	3		9·5	Nearly as last hour ; no scud seen from NE.
	21	504	64·0	61·0	3·0	0·3	0·3	2	— : — : 14	8·0	Woolly cirri ; cirro-strati, cumulo-strati, cirrous haze.
	22	508	62·0	60·0	2·0	0·4	0·2	3	14 : 14 : —	9·8	Coralline cumulo-strati, cirro-strati, loose cumuli.
	23	500	65·8	62·2	3·6	0·3	0·1	4	10 : — : —	9·5	Cir.-str. scud ; cumuli, cirro-strati ; strati on Cheviot.
24	0	496	67·5	63·2	4·3	0·2	0·3	4	10 : — : —	9·9	Scud ; cirri, cir.-str., cum. ; slight shower since 23h.
	1	499	67·8	62·9	4·9	0·5	0·4	5	10 : — : —	9·9	Id. ; id. ; rain$^{0·5}$
	2	496	62·2	61·2	1·0	0·6	0·1		10 : — : —	10·0	Id. ; rain^3
	3	495	61·5	60·7	0·8	0·1	0·0	5	12 : — : —	10·0	Id. ; thick mass of cirro-strati ; rain$^{3-5}$
	4	478	59·8	59·4	0·4	0·2	0·2	2	10 : — : —	10·0	Id. ; rain^3 ; rain$^{5-9}$ since 3h.
	5	471	59·9	59·3	0·6	0·4	0·2	4	4 : 10 : —	10·0	Thin smoky scud, moving quickly ; scud ; rain$^{1-3}$
	6	464	59·2	58·5	0·7	0·6	0·3	3	10 : — : —	10·0	Scud ; cirro-strati not so dense.
	7	458	58·0	57·2	0·8	0·5	0·1	6		10·0	Nearly uniform.
	8	463	57·0	56·4	0·6	0·4	0·4	3		10·0	Id. ; misty.
	9	476	56·2	55·8	0·4	0·3	0·0	4		10·0	Id. ; id.
	10	484	56·1	55·7	0·4	0·1	0·0	4		10·0	Id.
	11	473	55·9	55·2	0·7	0·0	0·0			10·0	Id.
	12	472	55·3	55·0	0·3	0·1	0·0			10·0	Id.
	13	29·473	55·2	54·9	0·3	0·1	0·2	4		10·0	Rather dark ; no twilight.
	14	472	54·3	54·1	0·2	0·1	0·0			10·0	Misty.
	15	483	53·6	53·5	0·1	0·4	0·4	3		10·0	Id.
	16	484	53·2	53·1	0·1	0·6	0·3	4		10·0	Scud ; rain^1
	17	505	53·1	52·9	0·2	0·6	0·3	4	6 : — : —	10·0	Id. moving rapidly ; rain$^{0·5}$
	18	506	53·2	52·8	0·4	0·4	0·7	4		10·0	Id. ; fair.
	19	505	52·4	51·9	0·5	1·0	0·7	4	4 : — : —	10·0	Loose misty scud ; nearly uniform.
	20	521	51·4	50·9	0·5	1·6	0·5	2	4 : — : —	10·0	Id. ; rain$^{0·5}$
	21	540	49·9	49·2	0·7	1·0	0·7	2	4 : — : —	10·0	Id. ; rain^1
	22	552	49·2	48·0	1·2	0·9	0·1	4	4 : — : —	10·0	Scud.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

June 23d 18h 25m. Thunder said to have been heard ; also at 24d 1h 30m.

June 24d 4h. Observation made at 4h 10m.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1^h.	Maximum force in 10^m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
24	23	29·560	50·9	48·5	2·4	1·2	1·2	3	4 : — : —	10·0	Scud.
25	0	562	50·7	48·3	2·4	1·2	0·8	2	4 : — : —	10·0	Id.
	1	567	49·9	48·0	1·9	1·1	0·4	3	4 : — : —	10·0	Id.; rain$^{0\cdot2-1}$ since last hour.
	2	568	51·7	49·0	2·7	1·1	0·8	3	4 : — : —	10·0	Id.; dense uniform cirro-strati; rain$^{0\cdot5}$
	3	574	51·6	47·7	3·9	1·2	0·9	3	4 : — : —	9·9	Id.; cirro-strati; patches of sky to N.
	4	570	51·2	47·2	4·0	1·3	0·8	3	3 : — : —	9·9	Id.; id.
	5	566	51·6	47·4	4·2	1·4	0·7	3	3 : — : —	9·9	Id.; id.
	6	565	51·8	47·0	4·8	1·7	1·2	3	3 : — : —	9 9	Id.
	7	568	49·9	46·7	3·2	1·3	0·8	2	4 : — : —	9·9	Id.
	8	576	49·1	46·5	2·6	1·2	0·6	4	5 : — : —	10·0	Id.
	9	569	48·8	45·2	3·6	1·1	0·5	1	5 : — : —	10·0	Id.
	10	570	48·2	44·9	3·3	0·9	0·5	2	5 : — : —	10·0	Id.; a few drops of rain.
	11	570	47·9	45·2	2·7	0·7	0·4	2		10·0	Id.
	12	574	47·2	45·1	2·1	0·9	0·5	2	4 : — : —	10·0	Id.
	13	29·566	46·9	45·3	1·6	0·4	0·2	2	4 : — : —	10·0	Scud; rain$^{0\cdot2}$
	14	560	46·3	45·1	1·2	0·3	0·1	2	4 : — : —	10·0	Id.; rain^{1} since last hour.
	15	558	46·7	45·3	1·4	0·3	0·3	2	2 : — : —	10·0	Id.; rain^{1}; occasional patches of sky.
	16	558	46·0	45·0	1·0	0·2	0·1	2	2 : — : —	9·8	Id.; rain$^{0\cdot2}$; cirro-strati to S.
	17	554	45·6	44·7	0·9	0·2	0·0	0	2 : — : —	7·0	Id.
	18	557	46·9	45·9	1·0	0·2	0·1	0	2 : — : —	10·0	Id.; rain^{1}
	19	567	47·8	46·9	0·9	0·3	0·4	1		10·0	Id.; id.
	20	569	49·1	47·8	1·3	0·9	1·0	2		10·0	Id.; id.
	21	575	50·2	47·7	2·5	0·9	0·6	2	3 : — : —	9·7	Loose scud; rain$^{0\cdot5}$
	22	583	50·7	47·3	3·4	1·2	1·3	2	4 : — : —	9·0	Scud; cirri and cirro-strati.
	23	590	50·0	48·1	1·9	1·4	1·0	2	4 : — : —	9·0	Id.; id.; rain^{1} since 22^h.
26	0	575	51·2	47·5	3·7	0·9	0·7	1	3 : — : —	9·5	Id.; woolly cirri.
	1	610	50·7	49·0	1·7	0·7	0·4	2	3 : — : —	10·0	Id.; id.; passing showers.
	2	619	52·0	48·9	3·1	0·6	0·5	2	3 : — : —	10·0	Id.; id.; rain$^{0\cdot2}$
	3	618	51·5	48·2	3·3	0·7	0·2	2	2 : — : —	10·0	Id.; id.
	4	619	52·2	48·5	3·7	0·2	0·1	2	2 : — : —	10·0	Id.
	5	626	53·0	48·7	4·3	0·1	0·1	2	2 : — : —	10·0	Id.
	6	626	51·8	48·4	3·4	0·2	0·1	2	1 : — : —	10·0	Id.
	7	638	50·8	47·3	3·5	0·3	0·3	2	2 : — : —	10·0	Id.; cirro-strati above.
	8	651	50·0	47·0	3·0	0·3	0·2	2	2 : — : —	10·0	Id.
	9	664	49·3	46·7	2·6	0·2	0·1	2	2 : — : —	10·0	Id.
	10	662	48·8	46·2	2·6	0·1	0·1	2	2 : — : —	10·0	Id.; clouds slightly broken at $10^h\ 10^m$.
	11	668	48·1	45·3	2·8	0·1	0·0	1		10·0	Id.
	12	672	47·0	45·3	1·7	0·0	0·0			10·0	Id.
	13	39·672	47·6	44·2	3·4	0·1	0·0	1		10·0	Scud.
	14	671	47·0	44·3	2·7	0·1	0·0			10·0	Id.; clouds rather broken.
	15	664	46·8	43·8	3·0	0·0	0·0	0		10·0	Id.
	16	654	46·7	43·9	2·8	0·1	0·0		30 : — : —	10·0	Id.
	17	659	46·9	44·2	2·7	0·0	0·0		30 : — : —	10·0	Id.
	18	666	47·6	45·0	2·6	0·0	0·0	30	29 : — : —	9·9	Id.; [ranges of cumuli to NE.
	19	668	48·8	45·5	3·3	0·5	0·1	1	4, 23 : 27 : —	9·9	Patches of scud; thin sheet of scud; cir.-cum.-str.;
	20	665	49·9	45·8	4·1	0·4	0·1	1	0, 28 : 27 : —	9·9	Id.; id.; id.
	21	669	51·5	46·6	4·9	0·4	0·2	31	30 : — : —	9·9	Scud; scud and loose cumuli on S. and E. horizon.
	22	663	52·1	47·7	4·4	0·3	0·2	3	29 : — : —	8·0	Id.; cirri and cirro-strati.
	23	662	55·0	49·7	5·3	0·3	0·2	4	28 : — : —	9·8	Id.
27	0	661	55·7	49·8	5·9	0·1	0·0		28 : — : —	9·9	Id.
	1	658	56·0	49·8	6·2	0·2	0·0	31	28 : — : —	9·8	Id.; cirri and cirro-strati; loose cumuli on horizon.
	2	656	56·0	49·8	6·2	0·3	0·4	31	26 : — : —	9·2	Id.
	3	656	58·0	50·3	7·7	0·4	0·3	0	27 : — : —	9·2	Scud and loose cumuli, slowly; cir. haze; faint halo.
	4	658	56·2	49·3	6·9	0·3	0·2	3		10·0	Id.; id.; id.
	5	668	54·8	49·6	5·2	0·4	0·2	4		9·5	Id. [slowly; patches of scud.
	6	657	54·2	49·0	5·2	0·2	0·0	4	— : 0 : 0	3·5	Mottled cirri, cir.-cum., and cirro-strati, moving very

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

June $25^d\ 20^h$. Observation made at $20^h\ 7^m$.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1^h.	10^m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
27 7	29·656	55·0	49·8	5·2	0·2	0·1	2	29 : — : —	8·5	Scud ; cirro-strati.
8	658	53·8	48·9	4·9	0·1	0·0		29 : — : —	9·8	Id. ; id.
9	665	52·1	48·0	4·1	0·1	0·0		29 : — : 1	7·0	Id. ; woolly and mottled cirri.
10	677	50·5	47·0	3·5	0·1	0·0	4	29 : — : —	9·7	Id. ; cirro-strati and cirrous clouds.
11	688	48·8	46·8	2·0	0·1	0·0		28 : — : —	9·0	Cirro-cumulous scud ; cirri and cirro-strati.
12	701	48·2	46·9	1·3	0·0	0·0			9·5	Scud.
13	29·702	48·5	46·3	2·2	0·0	0·0			10·0	Scud.
14	701	48·2	45·5	2·7	0·1	0·0			10·0	Id.
15	697	48·0	45·9	2·1	0·0	0·0		28 : — : —	9·0	Id. ; cirri and cirro-strati.
16	704	47·9	46·0	1·9	0·0	0·0			9·9	Cirro-strati, cir.-cum. and cirri ; shower[1] since 15^h.
17	710	47·8	46·2	1·6	0·0	0·0			9·8	Id., id.
18	711	48·7	47·4	1·3	0·0	0·0			10·0	Scud, loose cumuli, and masses of cirro-strati.
19	720	51·9	48·5	3·4	0·1	0·1	31	31 : — : —	8·5	Cirro-cumulous scud.
20	721	53·7	48·8	4·9	0·5	0·3	30	31 : — : —	7·0	Id.
21	737	55·7	50·7	5·0	0·5	0·5	31	0 : — : —	9·5	Id.
22	755	55·7	50·4	5·3	0·8	0·1	31	0 : — : —	9·0	Scud and loose cumuli.
23	753	58·7	52·0	6·7	0·3	0·2	31	31 : — : —	7·0	Id.
28 0	755	61·9	54·6	6·3	0·2	0·2	0	0 : — : —	9·0	Id.
1	757	63·7	56·4	7·3	0·2	0·1	29	31 : — : —	7·5	Id.
2	757	64·7	56·6	8·1	0·3	0·1	4	31 : 31 : —	6·0	Id. ; cirro-cumuli.
3	754	64·2	58·0	6·2	0·2	0·1	6	31 : 31 : —	3·0	Id. ; id.
4	756	63·8	56·9	7·9	0·2	0·0	6	30 : 30 : —	5·0	Id. ; id.
5	753	63·0	57·0	6·0	0·4	0·1	6	30 : 30 : —	7·5	Cirro-cumulo-strati, cumuli, and cumulo-strati.
6	753	61·5	56·5	5·0	0·1	0·0	7	— : — : 0	8·5	Woolly cirri ; cirro-strati and cumuli on horizon.
7	756	58·9	54·2	4·7	0·3	0·3	3	30 : — : —	9·0	Scud and loose cumuli ; cirri, cirro-strati.
8	765	57·5	53·3	4·2	0·2	0·0	4	26 : 30 : —	9·5	Scud and electric-looking cum. ; cir.-str. scud ; shower[1]
9	782	55·2	52·0	3·2	0·2	0·2	3	30 : — : —	7·5	Scud ; cirro-strati and cumuli to SE. and W.
10	793	52·9	51·2	1·7	0·3	0·1	3	28 : — : —	7·0	Scud and loose cumuli.
11	802	52·9	50·8	2·1	0·3	0·3	3	28 : — : —	10·0	Id.
12	812	52·7	50·6	2·1	0·3	0·2	3		10·0	Scud.
13	29·819	52·0	50·1	1·9	0·6	0·3	5		10·0	Scud.
14	828	50·2	48·5	1·7	0·5	0·3	5		10·0	Id. ; a few drops of rain.
15	828	49·6	48·1	1·5	0·3	0·1	8	8 : — : —	10·0	Patches of scud ; nearly uniform mass above.
16	830	49·9	47·3	2·6	0·2	0·1	7	7 : — : —	10·0	Id. ; id.
17	835	49·8	47·3	2·5	0·2	0·1	8	7 : — : —	10·0	Id. ; id. ; rain$^{0·1}$
18	842	50·0	47·4	2·6	0·2	0·2	7	7 : — : —	10·0	Id. ; id. ; id.
19	844	50·7	48·2	2·5	0·1	0·0	6		10·0	Cirri and cirro-strati.
20	847	51·0	48·0	3·0	0·1	0·0			10·0	Id.
21	854	51·7	48·6	3·1	0·1	0·1	4		10·0	Uniform mass of thick cirro-strati.
22	856	52·0	48·6	3·4	0·2	0·1	6		10·0	Id.
23	861	55·4	51·5	3·9	0·2	0·0	4		9·9	Id.
29 0	855	58·0	54·0	4·0	0·0	0·0	7	25 : — : —	9·7	Scud and loose cumuli ; cirri and cirro-strati.
1	848	60·2	57·8	2·4	0·1	0·0	4	24 : — : —	7·0	Id. ; id.
2	838	59·5	54·2	5·3	0·2	0·2	4		8·0	Id.
3	838	62·0	55·1	6·9	0·2	0·1	4	26 : — : —	7·5	Id. ; cirri, cirro-strati, cirrous haze.
4	833	60·0	53·2	6·8	0·2	0·1	7		9·0	Id. ; id.
5	829	59·8	53·2	6·6	0·3	0·3	4	27 : — : —	10·0	Cirro-stratous scud ; cirrous clouds.
6	831	57·2	50·9	6·3	0·3	0·2	5		10·0	Nearly uniform mass of cirro-strati ; patches of scud.
7	823	57·8	52·3	5·5	0·2	0·1	9	24 : — : 24	9·8	Cirro-stratous scud and cirri.
8	821	56·9	52·5	4·4	0·1	0·0	14	24 : — : 24	9·2	Id.
9	821	54·2	50·7	3·5	0·1	0·0	15		9·5	Id.
10	824	52·7	49·3	3·4	0·1	0·0	15		9·2	Id.
11	816	50·8	48·5	2·3	0·0	0·0			6·0	Cirro-cumulous scud, cumuli.
12	817	47·3	46·4	0·9	0·0	0·0			3·0	Id., cir.-str., light cirri, cirrous haze.
30 0	29·709	...	...	...	0·2	...				

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
30 13	29·657	45·2	44·6	0·6	0·7	0·0			1·5	Cirri and cirro-strati on N. and S. horizon.
14	648	44·0	43·9	0·1	0·0	0·0			0·5	Id.; heavy dew.
15	637	42·5	42·5	...	0·0	0·0			6·0	Cirri, cirro-strati, and haze.
16	636	45·8	45·2	0·6	0·0	0·0			10·0	Sky covered with a uniform mass of scud.
17	637	46·4	46·0	0·4	0·0	0·0			10·0	As before; very foggy.
18	634	47·9	46·9	1·0	0·0	0·0			10·0	Id.
19	635	50·0	48·9	1·1	0·0	0·0	16		10·0	Sky covered with a uniform mass of dense clouds.
20	635	52·0	50·5	1·5	0·0	0·0			10·0	Id.
21	640	56·3	53·4	2·9	0·0	0·0	4	4 : — : —	10·0	Foggy scud; fog about 2 miles off.
22	636	55·0	52·1	2·9	0 0	0·0		4 : — : —	10·0	Id.
23	641	57·0	53·0	4·0	0·0	0·0	2	3 : — : —	10·0	Id.
1 0	639	59·1	53·8	5·3	0·1	0·2	2	3 : — : —	10·0	Foggy scud and loose cumuli.
1	643	59·1	53·8	5·3	0·5	0·4	6	2 : 24 : —	9·0	Loose cumuli; cirro-cumulous scud; clouds broken. ⊙
2	647	60·5	54·3	6·2	0·6	0·3	4	2 : — : —	7·0	Scud and loose cumuli; streaks of cirri. ⊙
3	645	57·7	53·0	4·7	0·7	0·6	4	4 : 24 : —	6·0	Id.; patches of cir.-cum. scud, disappearing [quickly.
4	646	57·9	53·2	4·7	0·6	0·4	5	6 : — : —	8·0	Id.; cirro-cumulous scud. ⊖
5	635	57·4	53·1	4·3	0·4	0·4	8	6 : 24 : —	4·0	Id.; id.; cirri. ⊙
6	633	55·8	51·9	3·9	0·4	0·4	5	5 : — : —	4·0	Id.; cirri and cirro-strati.
7	643	53·0	50·2	2·8	0·5	0·2	6	6 : 25 : —	4·0	Id.; scud, higher; cirri and cirro-strati.
8	650	52·7	49·8	2·9	0·2	0·2	3	8 : 26 : —	9·0	Patches of scud; cirro-cumulous scud; cirri.
9	662	51·2	49·1	2·1	0·2	0·1	3		9·9	As before; heavy clouds to E. and NE.
10	664	50·7	49·0	1·7	0·1	0·1		28 : — : —	10·0	Scud; a few drops of rain.
11	670	49·6	48·8	0·8	0·1	0·0	4		9·9	Id.; slight shower since 10h.
12	675	49·8	49·0	0·8	0·0	0·0	4	28 : — : —	9·8	Id.; cirro-strati and sky to NE.
13	29·671	49·7	49·0	0·7	0·0	0·0	4	28 : — : —	10·0	Scud.
14	665	49·5	48·7	0·8	0·0	0·0	3		9·8	Id.; clouds rather broken; rain$^{0·5}$
15	659	48·8	48·2	0·6	0·0	0·0	3	— : 28 : —	8·0	Cirro-cumulo-strati, moving slowly; thin smoky scud.
16	661	47·3	47·1	0·2	0·0	0·0		4 : 28 : —	9·5	Id.; id.
17	664	47·8	47·2	0·6	0·0	0·0			9·0	Id.; id.
18	670	49·3	48·6	0·7	0·0	0·0		4 : 28 : 28	3·0	Loose scud and cum.; cir.-cum. scud; cirri. ⊙
19	666	50·2	49·2	1·0	0·0	0·0			3·0	As before. ⊙
20	672	53·3	50·3	3·0	0·0	0·0		5 : 26 : —	9·0	Thin scud moving rapidly; cir.-cum.-str., cirri, and cirro-strati. ⊙
21	675	56·6	51·9	4·7	0·0	0·0		2 : — : —	10·0	Scud and loose cumuli; cirro-strati, cirro-cumuli.
22	678	56·2	51·2	5·0	0·1	0·1	4		10·0	Id.; id.
23	684	53·2	49·1	4·1	0·2	0·1	4		9·8	Id.
2 0	684	57·7	50·8	6·9	0·2	0·1	8	28 : 4 : —	9·6	Thin scud; scud and loose cumuli.
1	681	60·1	52·3	7·8	0·2	0·1	6	2 : — : —	9·5	Scud and loose cum.; ranges of cum.; cirro-strati.
2	679	60·7	52·6	8·1	0·1	0·0			9·5	Id.
3	676	63·0	54·7	8·3	0·0	0·0		31 : — : —	7·0	Id. ⊖
4	671	62·6	54·2	8·4	0·0	0·0		0 : — : —	9·3	Id., moving slowly; cum., cir.-str.
5	659	61·8	52·8	9·0	0·0	0·0		— : 28 : —	7·0	Cirro-cumuli; cumuli and cirro-strati on horizon. ⊙
6	653	61·0	52·0	9·0	0·0	0·0		28 : 28 : —	8·2	Cir.-str. scud, cumuli, and cum.-str. moving slowly.
7	658	56·7	50·8	5·9	0·0	0·0	4	— : — : 28	9·0	Thick and dark wavy cir.-str.; woolly cirri. ⊙
8	659	54·9	49·6	5·3	0·0	0·2	4		9·5	Id.
9	668	53·3	48·0	5·3	0·2	0·0	4		10·0	Id., looser than before. ⊖
10	678	52·7	48·0	4·7	0·0	0·0	4		10·0	Id., id.
11	681	42·0	48·3	3·7	0·0	0·0	4	28 : — : —	10·0	Thick heavy scud.
12	676	51·3	48·0	3·3	0·0	0·0			10·0	Id.
13	29·669	50·3	48·1	2·2	0·0	0·0			10·0	Thick heavy scud.
14	668	49·8	48·0	1·8	0·0	0·0			9·9	Id.; sky on N. horizon.
15	659	49·1	47·3	1·8	0·0	0·0	4		9·9	Scud and cir.-str. scud; slight shower at 14h 40m.
16	658	48·8	47·1	1·7	0·0	0·0	2	— : 31 : —	9·5	Cirro-cumulous scud and cirro-cumuli.
17	655	47·7	46·6	1·1	0·0	0·0		29 : — : —	3·0	Scud; cirro-cumuli and cirro-strati. ☽
18	656	50·0	48·8	1·2	0·0	0·0		— : 29 : —	8·0	Cirro-stratous scud; cirro-cumuli, cirro-strati.
19	657	51·7	50·2	1·5	0·0	0·0	4	7 : 28 : —	9·8	Thin smoky scud; large cirro cumulo-strati.
20	655	54·5	51·9	2·6	0·0	0·0	7	7 : 28 : —	9·8	As before; cumuli and cumulo-strati to E. and S.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

July 1d 1h. For an explanation of the symbols used after the meteorological remarks, see *Introduction.*

July 1d 18h. Fine linear, mottled, and arborescent cirri: loose smoky scud trailing on the ground; patches of smoky scud suddenly rise to SW. and as suddenly disappear.

Gött. Mean Time.		Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
2	21	29·657	55·2	51·5	3·7	0·0	0·0	4	— : 28 : —	10·0	Large cirro-cumuli; cirri and cirro-strati.
	22	655	56·0	51·2	4·8	0·1	0·1	4		10·0	Id.; id.
	23	655	57·0	52·4	4·6	0·2	0·2	6	8 : 24 : 24	9·9	Loose scud; woolly cirri and cirro-cumuli.
3	0	655	57·7	53·2	4·5	0·2	0·3	4	8 : — : 21	9·2	Thin scud; woolly cirri and cirro-strati. ⊖
	1	646	60·3	55·0	5·3	0·2	0·2	1	— : — : 25	7·5	Woolly cirri and cirro-strati. ⊙
	2	640	59·3	54·2	5·1	0·3	0·4	4	10 : 25 : —	8·0	Thin scud; cirro-strati. ⊖
	3	634	59·6	54·8	4·8	0·5	0·2	5	— : 26 : —	9·9	Cirro-stratous scud.
	4	628	57·8	53·0	4·8	0·3	0·1	2		9·9	Id.; scud below.
	5	626	57·4	53·4	4·0	0·1	0·0	4	12 : — : —	10·0	Scud; cirro-stratous scud; drops of rain.
	6	609	59·0	55·4	3·6	0·2	0·0	14	27 : — : —	9·5	Scud and cumuli; electric-looking; hazy on horizon.
	7	607	58·1	54·5	3·6	0·0	0·0		27 : — : —	9·5	Id.; cirro-strati.
	8	608	56·8	53·6	3·2	0·0	0·0	14	27 : — : —	9·5	Id.; dark and gloomy to S. and SW.
	9	612	53·2	50·9	2·3	0·0	0·0		12 : 24 : —	7·0	Patches of loose scud; cirro-cumulous scud, slowly. ⊙
	10	616	50·0	48·6	1·4	0·0	0·0		— : 26 : —	6·0	Cirro-cumulous scud; cirrous haze and cirro-strati.
	11	615	48·2	47·2	1·0	0·0	0·0			6·0	Id.
	12	612	46·0	45·5	0·5	0·0	0·0			7·0	Cirro-strati, woolly cirro-cumuli; dense clouds to W.
	13	29·605	44·8	44·6	0·2	0·0	0·0			3·0	Cirro-cumuli and cirro-strati. ☽
	14	603	43·4	43·3	0·1	0·0	0·0			5·0	Cirrous haze; lunar corona; dew. ☽
	15	595	45·7	45·2	0·5	0·0	0·0			10·0	Sky covered with scud.
	16	582	47·0	46·5	0·5	0·0	0·0			10·0	Id.
	17	581	49·1	48·3	0·8	0·0	0·0		4 : — : —	10·0	Id.
	18	574	49·6	48·9	0·7	0·0	0·0		7 : — : —	10·0	Scud.
	19	573	50·1	48·9	1·2	0·2	0·2	5	6 : — : —	10·0	Thick scud.
	20	572	51·3	49·1	2·2	0·2	0·1	6	6 : — : —	10·0	Id.
	21	572	52·0	49·7	2·3	0·2	0·1	5	8 : — : —	10·0	Id.
	22	570	51·7	49·0	2·7	0·3	0·3	5	7 : — : —	10·0	Id.
	23	570	52·3	49·4	2·9	0·2	0·1	6	7 : — : —	10·0	Id.
4	0	565	53·7	50·4	3·3	0·2	0·2	6	7 : — : —	10·0	Id.
	1	563	52·6	49·6	3·0	0·3	0·2	6	7 : — : —	10·0	Id.
	2	558	53·8	50·0	3·8	0·2	0·1	5		10·0	Id.; uniform mass of cirro-strati.
	3	551	54·3	50·5	3·8	0·2	0·1	6		10·0	Id.
	4	539	56·0	51·4	4·6	0·2	0·1	4	5 : — : —	9·9	Id., becoming cum. to NE.; dense cir.-str.
	5	529	55·9	50·7	5·2	0·2	0·0		2 : 4 : 25	4·0	Thin scud; loose cum.; fine locks of cirrus. ⊙
	6	518	56·9	51·1	5·8	0·1	0·1		4 : 0 : —	6·0	Scud; loose cum.; cirri and cirro-strati, cir. haze. ⊙
	7	515	53·2	49·2	4·0	0·2	0·3	4	0 : — : —	2·0	Patch of thin scud; cirri. ⊙
	8	521	51·2	47·6	3·6	0·3	0·3	2	— : — : 25	0·7	Fine reticulated cirri; scud, cum., cir.-str. on hor. ⊙
	9	521	48·0	45·7	2·3	0·3	0·0		— : — : 25	1·0	Varieties of cirri lying W by N. to E by S.; cir.-str. on
	10	524	44·6	43·6	1·0	0·0	0·0		4 : — : —	1·0	Scud to N.; cirri, tinged with red to NW. [hor. ⊙
	11	528	45·8	45·0	0·8	0·0	0·0		2 : — : —	9·8	Scud.
	12	518	46·8	46·0	0·8	0·0	0·0			10·0	Id.
	13	29·510	47·3	46·5	0·8	0·0	0·0			10·0	Scud.
	14	503	47·7	46·6	1·1	0·0	0·0	24		9·9	Id.; sky to N.
	15	498	47·4	46·7	0·7	0·0	0·0	24	2 : — : —	9·8	Mottled scud.
	16	485	47·6	46·9	0·7	0·0	0·0		3 : — : —	10·0	Scud.
	17	484	48·1	47·2	0·9	0·0	0·0		3 : — : —	10·0	Id.
	18	488	49·1	48·0	1·1	0·0	0·0		4 : — : —	10·0	Thin smoky scud.
	19	491	50·8	49·0	1·8	0·0	0·0			10·0	Scud on Cheviot.
	20	490	51·7	49·3	2·4	0·0	0·0		0 : — : —	10·0	Scud.
	21	489	53·7	50·6	3·1	0·0	0·0			10·0	Cir.-str. scud over the sky; patches of loose scud below.
	22	485	54·9	51·9	3·0	0·0	0·0		0 : — : —	10·0	Scud; cirro-stratous scud.
	23	483	56·1	52·0	4·1	0·0	0·0			10·0	Id.; id.
5	0	475	56·9	52·0	4·9	0·0	0·0		27 : — : —	10·0	Id.; loose cumuli and cirrous clouds.
	1	475	57·3	52·5	4·8	0·0	0·0		28 : — : —	10·0	Id.; id.
	2	475	58·9	54·0	4·9	0·0	0·0	14		10·0	Id.
	3	477	58·5	53·4	5·1	0·0	0·0		27 : — : —	10·0	Id.
	4	482	60·0	54·8	5·2	0·0	0·0		28 : — : —	10·0	Id.; cirro-strati.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
5	5	29.480	60.0	54.9	5.1	0.0	0.0	15		10.0	Wavy cirro-stratus, moving very slowly.
	6	478	59.4	54.3	5.1	0.0	0.0			10.0	Thick wavy cirro-stratus, moving very slowly.
	7	487	55.8	52.3	3.5	0.1	0.1	4	0 : — :	10.0	Scud.
	8	491	53.8	50.7	3.1	0.1	0.1	4	0 : — : —	10.0	Thick wavy scud.
	9	501	52.9	50.3	2.6	0.0	0.0	4	0 : — : —	10.0	Id.
	10	509	52.3	50.0	2.3	0.0	0.0	2	0 : — : —	10.0	Id.
	11	510	52.1	50.1	2.0	0.0	0.0	2	0 : — : —	10.0	Id.
	12	519	51.6	49.4	2.2	0.1	0.0	4		10.0	Scud.
	13	29.521	51.0	49.6	1.4	0.0	0.0	2		10.0	Scud.
	14	528	50.6	49.2	1.4	0.0	0.0	2		10.0	Id.
	15	531	50.3	49.0	1.3	0.0	0.0		28 : — : —	10.0	Id.
	16	535	50.5	49.4	1.1	0.0	0.0	4	6 : 28 : —	10.0	Loose scud; cirro-stratous scud.
	17	543	50.1	49.1	1.0	0.0	0.0	4		10.0	Uniform mass of clouds.
	18	558	49.7	49.0	0.7	0.0	0.0	1		10.0	Id.; fog visible $\frac{3}{4}$ mile off.
	19	570	49.9	49.3	0.6	0.1	0.0	4		10.0	As before; fog at $\frac{1}{2}$ mile; very light drizzle.
	20	579	50.5	49.7	0.8	0.0	0.0	1	6 : — : —	10.0	Loose scud; fog as before.
	21	586	50.9	49.9	1.0	0.0	0.0	5		10.0	Scud; very light drizzle.
	22	601	51.5	50.3	1.2	0.0	0.0			10.0	Id.; rain$^{0.2}$
	23	607	53.8	52.3	1.5	0.0	0.0		30 : — : —	10.0	Id.; slight drizzle.
6	0	618	54.3	52.5	1.8	0.0	0.0	8	28 : — : —	10.0	Thin smoky scud; rain$^{0.2}$
	1	620	57.2	54.9	2.3	0.0	0.0		28 : — : —	10.0	Id.; fair.
	2	630	52.2	51.3	0.9	0.2	0.0	8	6 : 28 : —	9.5	Scud in two currents; cum. and cum.-str. to E.; light drizzle.
	3	631	60.4	56.3	4.1	0.0	0.0		30 : — : —	9.6	Scud, loose cumuli, and woolly cirri.
	4	635	59.2	54.3	4.9	0.0	0.0		30 : — : —	9.0	Thin scud; loose cumuli; cirri and cirro-strati.
	5	649	58.0	53.3	4.7	0.3	0.3	2	1 : 28 : —	3.0	Scud in two currents. ⊙
	6	655	56.1	51.6	4.5	0.5	0.3	6	0 : 29 : 0	4.0	Id.; cirri and cirro-cumuli. ⊙
	7	666	56.4	51.3	5.1	0.4	0.5	7	— : 0 : —	6.0	Loose cirro-cumuli, moving very slowly; scud. ⊙
	8	684	55.1	51.1	4.0	0.5	0.0	8	30 : 0 : 0	7.0	Scud; mottled cirri and cirro-cumuli. ⊙
	9	699	52.9	50.8	2.1	0.1	0.1	4	— : 30 : —	9.0	Cir.-str. scud; loose scud to E.; strati on Cheviot.
	10	711	51.8	49.7	2.1	0.2	0.1	6	6 : 30 : —	9.9	Loose scud; cirro-stratous scud.
	11	730	50.8	48.9	1.9	0.1	0.0	4	28 : — : —	9.0	Scud.
	12	729	50.5	48.9	1.6	0.0	0.0	12		9.8	Loose scud; cirro-strati to E.
7	0	29.745	...	...	...	0.1	0.1	2		......	
	13	29.705	43.6	43.4	0.2	0.8	0.0		— : — : 0	1.3	Cirri and cir.-str. radiating from N.; faint lunar corona; much dew. ☽
	14	707	43.4	43.3	0.1	0.0	0.0		— : — : 28	5.5	As before. ☽
	15	698	42.7	42.7	...	0.0	0.0	18	— : — : 26	2.0	Cirri and cirro-strati. ☽
	16	694	41.6	41.6	...	0.0	0.0		— : 28 : 28	8.0	Cir.-cum., cirri, cir.-str.; strati; clouds red to W. ☽
	17	687	44.7	44.3	0.4	0.0	0.0			9.2	As before; strati to N. ⊙
	18	675	46.3	45.8	0.5	0.0	0.0	24	— : 28 : —	9.5	Cir.-str. edged with cir.: lin. and arborescent cirri to E.
	19	674	51.0	49.9	1.1	0.0	0.0	24	— : 27 : —	9.3	Woolly cirro-strati; woolly cirri. ⊙
	20	676	54.0	51.2	2.8	0.0	0.0	22		9.0	Id.; id.; patches of scud. ⊖
	21	673	58.7	52.5	6.2	0.1	0.1	28	— : 26 : —	7.0	Cirro-cumulo-strati; cirro-strati. ⊖
	22	666	61.0	52.8	8.2	0.2	0.1	23	— : 28 : —	8.0	Id.; cirro-strati to W.; cum. to SE. ⊖
	23	663	62.2	55.0	7.2	0.3	0.2	26		9.3	Cirro-stratous scud; cirro-strati, cumuli.
8	0	666	60.0	53.3	6.7	0.3	0.2	23		9.9	Cumuli and scud to SE.; thick cirro-strati.
	1	669	61.5	55.9	5.6	0.3	0.1	23	26 : — : —	10.0	Scud; cumuli, thick cirro-strati; drops of rain.
	2	656	60.3	56.3	4.0	0.2	0.1	20		10.0	As before; fair.
	3	642	64.2	58.0	6.2	0.3	0.2	23	28 : — : —	9.9	Scud and loose cumuli.
	4	629	65.2	58.1	7.1	0.2	0.1	23	28 : — : —	5.0	Loose cumuli; cirro-strati to NE. ⊙
	5	607	66.0	56.0	10.0	0.5	0.2	20	26 : — : —	3.0	Cumuli. ⊙
	6	596	64.3	55.7	8.6	0.5	0.8	27	23 : — : —	3.0	Id.; cirro-strati on NE. and SW. horizon. ⊙
	7	602	61.4	54.0	7.4	0.7	0.6	27		1.5	Id.; id. ⊙
	8	610	61.9	53.3	8.6	0.4	0.3	22		2.0	Loose cumuli and cirro-strati. ⊙
	9	613	55.1	51.7	3.4	0.3	0.1	23	— : 26 : —	2.0	Cirro-stratous scud, cirro-strati, cirro-cumuli, cirri. ⊙
	10	611	52.2	49.8	2.4	0.1	0.0	22	— : 26 : —	2.0	As before.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

July 6d 5h. A light vane, composed of two crow feathers, erected instead of the ribbon previously in use, see *Introduction*.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
8 11	29·617	50·6	48·8	1·8	0·1	0·0			2·5	Cirro-cumulous scud ; cirro-strati.
12	615	51·4	49·0	2·4	0·0	0·0	22		6·0	Scud ; cirro-strati.
13	29·616	50·7	48·7	2·0	0·1	0·0	20		8·0	Scud ; cirro-strati on horizon.
14	606	48·5	47·6	0·9	0·0	0·0			2·5	Scud and cirro-strati on horizon. ☽
15	605	49·2	48·0	1·2	0·0	0·0		26 : — : —	10·0	Thick scud.
16	608	50·2	49·0	1·2	0·0	0·0		26 : — : —	10·0	Scud ; cirro-strati.
17	612	51·0	49·4	1·6	0·0	0·0	20	26 : — : —	9·9	Cirro-stratous scud ; cirro-cumuli and cirri to S.
18	616	52·6	50·3	2·3	0·0	0·0		— : 29 : —	9·9	Cirro-strati and cirro-stratous scud ; sky to S.
19	617	54·9	52·0	2·9	0·0	0·0	22	— : 30 : —	9·8	Id. [or rain to E.
20	618	57·2	53·3	3·9	0·1	0·1	30	31 : — : —	9·9	Patches of scud ; thick uniform mass of cir.-str., mist
21	629	57·2	53·0	4·2	0·3	0·2	31		10·0	As before.
22	634	57·8	53·5	4·3	0·4	0·2	31	31 : — : —	10·0	Scud ; cirro-strati.
23	635	59·2	55·2	4·0	0·3	0·2	31	0 : — : —	10·0	Id. ; id.
9 0	641	60·1	55·4	4·7	0·3	0·2	31	31 : — : —	10·0	Id. ; id.
1	650	57·2	56·5	0·7	0·2	0·1	2	0 : — : —	10·0	Scud very low ; rain to E. ; rain$^{1·5}$ since 0h.
2	664	57·2	55·8	1·4	0·4	0·2	31	0 : — : —	10·0	Scud ; cirro-strati.
3	675	58·3	55·6	2·7	0·5	0·7	2	2 : — : —	10·0	Id.
4	691	58·0	55·0	3·0	0·6	0·1	4	3 : — : —	10·0	Id.
5	692	57·5	54·5	3·0	0·1	0·1	8	4 : 30 : —	9·9	Id. ; cirro-stratus.
6	693	57·4	54·2	3·2	0·1	0·0	6	4 : 28 : —	9·9	Loose scud ; cirro-cumulo-strati, cirro-cumulous scud.
7	694	57·0	53·3	3·7	0·1	0·0	7	4 : 26 : —	9·9	Id. ; id., id.
8	695	56·6	53·4	†3·2	0·0	0·0	8	4 : 28 : —	7·0	Patches of scud ; woolly cir.-cum. and cirro-strati. ⊙
9	697	54·0	52·5	↓1·5	0·0	0·0	8	— : 28 : —	9·9	Cirro-stratous scud. [from SSE. (14) ; rain$^{0·5}$
10	702	53·7	52·5	1·2	0·0	0·0	30		10·0	Thick scud and cir.-str. ; smoke 5 miles to E. moves
11	700	52·1	52·1	...	0·0	0·0	1		10·0	Scud ; rain^{1} ; rain^{3} since 10h.
12	704	52·5	52·0	0·5	0·0	0·0	6	26 : — : —	10·0	Id.
13	29·706	50·8	50·6	0·2	0·0	0·0	7		7·0	Sky in zenith.
14	696	48·0	47·8	0·2	0·0	0·0			8·0	Cirro-cumuli ; very foggy. ☽
15	680	49·0	48·9	0·1	0·0	0·0		21 : 28 : —	9·0	Smoky scud ; cir.-cum.-str. ; fog at ¼ mile.
16	683	49·0	48·4	0·6	0·0	0·0	23	22 : — : —	9·9	Id. ; woolly cirri, tinged with red.
17	682	48·5	47·9	0·6	0·0	0·0	22	24 : 30 : —	10·0	Scud in two currents ; cir.-str. radiating from NNW.
18	674	49·0	48·0	1·0	0·0	0·0	20	— : 24 : —	9·9	Cir.-str. scud ; cirri and cirro-strati ; scud on Cheviot.
19	672	51·7	51·0	0·7	0·0	0·0	20	— : 28 : —	8·5	Cir.-cum.-str. and cir.-str. ; lin. cirri ; scud on Cheviot.
20	663	55·7	52·1	3·6	0·3	0·2	22	24 : 28 : —	9·5	Masses of loose scud ; cirro-strati.
21	646	57·7	53·1	4·6	0·5	0·3	21	24 : 25 : —	9·2	Patches of scud ; woolly cirro-strati. ⊖
22	630	60·6	55·1	5·5	0·5	0·5	21	24 : 25 : —	9·0	Scud and loose cumuli ; woolly cirri, cirro-strati. ⊙
23	619	64·0	57·2	6·8	0·9	0·5	20	23 : — : —	8·5	Loose cumuli ; cirro-cumuli, cirro-strati, cirri. ⊙
10 0	602	66·0	58·3	7·7	1·5	1·1	20	20 : 26 : —	7·5	Id. ; id., id., id. ⊖
1	596	64·0	56·7	7·3	1·8	0·9	20	21 : — : —	9·9	Scud and cumuli ; cirro-strati.
2	587	61·0	55·3	5·7	1·8	0·7	20	21 : — : —	10·0	Id. ; dense cirro-stratus.
3	567	58·8	54·7	4·1	1·2	0·9	20	21 : — : —	10·0	Thick heavy scud ; a few drops of rain.
4	538	59·6	57·4	2·2	1·0	1·2	19	21 : — : —	10·0	Id. ; dense cirro-strati ; rain$^{0·5-2·0}$
5	513	58·0	54·9	3·1	1·3	0·9	19	21 : — : —	10·0	As before ; uniform mass of dense cirro-strati.
6	501	57·9	55·5	2·4	1·3	0·3	19	21 : — : —	10·0	Id. ; id.
7	476	60·0	57·3	2·7	1·2	1·2	19	21 : 25 : —	9·5	Loose scud, moving quickly ; cirro-strati, cirro-cumuli.
8	462	58·0	55·3	2·7	1·3	1·3	21	21 : 24 : —	10·0	Patches of loose scud ; thick cirro-stratous scud.
9	467	58·9	56·5	2·4	1·0	0·2	22	24 : — : —	9·7	Scud ; cirro-strati to N. and E. ; cumuli on S. horizon.
10	470	57·9	54·8	3·1	0·8	0·3	24 v.	25 : — : —	3·0	Id. ; cirro-strati and cirro-cumuli to N.
11	499	56·6	53·6	3·0	1·5	0·2	20	25 : 25 : —	6·0	Id. ; cirro-stratous scud ; white cirro-cumuli-strati.
12	503	56·3	53·6	2·7	0·3	0·4	23		8·2	Nearly as at 11h.
13	29·497	55·7	52·3	3·4	0·6	0·1	20		9·5	Nearly as at 11h.
14	482	55·0	52·0	3·0	0·3	0·1	18		10·0	Id.
15	486	54·0	50·5	3·5	0·4	0·7	22	26 : 24 : 24	9·0	Scud ; woolly cir.-cum.-str, linear and woolly cirri.
16	489	52·6	49·1	3·5	0·4	0·4	21	26 : 24 : —	6·0	Thin scud ; cirro-cumulo-strati.
17	509	53·4	49·9	†3·5	0·4	0·1	24	26 : 24 : —	8·0	As before ; the scud orange in some places. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

† ↓ See *Introduction*,—article Thermometers.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.	
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.		
10	18	29·513	53·4	49·3	4·1	0·1	0·1	21	— : 26 : —	1·2	Cirro-stratous scud; patches of cirri.	⊙
	19	505	56·3	51·3	5·0	0·6	0·4	21	24 : — : 27	5·0	Scud; woolly cirri; cirro-strati.	⊙
	20	493	56·8	52·0	4·8	1·0	0·6	21		7·0	Id.; id.; id.	⊖
	21	468	59·3	53·0	↓6·3	1·1	1·8	20	24 : 24 : —	5·5	Loose cumuli; patches of watery cirro-strati.	⊙
	22	474	57·7	53·7	4·0	2·5	0·7	28		9·9	As before; rain falling to NE.	
	23	458	60·0	53·0	7·0	2·2	2·2	26		7·5	Scud and loose cumuli; cirro-strati to E.	⊙
11	0	462	60·6	53·4	7·2	3·3	1·1	24	24 : — : —	9·9	Id.	
	1	474	59·3	53·0	6·3	2·3	1·6	28	24 : — : —	10·0	Id.	
	2	464	58·2	52·7	5·5	2·0	1·6	22	23 : — : —	9·9	Scud; rain$^{0·5}$ since 1h.	
	3	457	59·8	54·0	5·8	2·5	2·0	22	22 : 26 : —	7·0	Id.; woolly cirri; loose cumuli on horizon.	
	4	453	61·0	55·0	6·0	2·6	0·9	20	23 : — : —	9·0	Scud and loose cumuli; cirri and cirro-strati.	
	5	452	59·2	54·8	4·4	2·2	0·8	20		7·0	Scud, cumuli, and nimbi; cirro-strati; passing showers.	
	6	460	61·0	54·9	†6·1	1·7	1·9	21	25 : — : —	3·0	Nearly as at 5h, no nimbi.	⊙
	7	461	60·5	54·8	5·7	2·3	1·3	22	24 : — : —	4·0	Scud and loose cumuli; cirri to S.	⊙
	8	470	57·3	52·7	4·6	1·5	0·4	21	24 : — : —	7·0	Id.; id.	⊙
	9	476	54·8	51·3	↓3·5	0·8	0·5	21	24 : 26 : —	7·2	Orange-coloured scud; cir.-str. scud; cum.-str., cirri.	⊙
	10	479	52·7	49·7	3·0	0·6	0·4	21	27 : 27 : —	1·0	Masses of scud and cirro-strati.	
	11	474	51·9	49·2	2·7	0·7	0·2	20	26 : 26 : —	1·0	Id.	
	12	482	49·9	48·6	1·3	0·4	0·2	20		1·5	Scud, cirro-strati.	
	13	29·490	51·6	49·1	2·5	0·2	0·2	21		7·0	Scud, cirro-strati.	
	14	490	49·6	47·9	1·7	0·3	0·0	20		7·5	Id.; id.	
	15	488	49·7	48·2	1·5	0·1	0·0	20	27 : — : —	7·5	Id.; id.	
	16	488	49·7	48·3	1·4	0·2	0·2	20	— : 26 : —	5·0	Cirro-cumulous scud; cirro-strati.	
	17	500	51·0	49·0	2·0	0·2	0·1	24	— : 26 : —	9·5	Id.; id.	
	18	516	52·1	49·6	2·5	0·2	0·1	22	— : 26 : —	9·5	Cir.-cum. scud; cir.-str.; cum.; stratus on Cheviot	
	19	530	53·2	50·0	3·2	0·2	0·1	22	27 : 25 : —	7·5	Smoky scud; cir.-str. scud; streaks of cirri.	⊖
	20	540	54·7	50·6	4·1	0·3	0·1	22	28 : 24 : —	8·0	Cir.-cum. scud; scud and piles of cumuli.	⊖
	21	546	55·4	50·9	4·5	0·3	0·2	26	26 : — : —	6·0	Scud; cirro-cumuli, cirro-strati, cum.-str. on hor.	⊖
	22	556	57·1	51·8	5·3	0·3	0·4	23	28 : — : —	9·0	Id.; cumuli on horizon.	⊖
	23	563	58·6	50·5	8·1	0·7	0·7	28	26 : — : —	9·0	Scud and loose cumuli.	⊙
12	0	571	59·6	51·4	8·2	0·9	0·6	28	27 : — : —	9·5	Id.	
	1	572	61·8	53·9	7·9	0·5	1·2	25	26 : — : —	9·5	Id.	⊖
	2	581	59·4	51·7	7·7	0·7	0·6	25	26 : — : —	9·7	Scud; cumuli, cirrous haze, cirro-strati.	
	3	576	59·3	52·8	6·5	0·6	0·5	22	27 : — : —	7·0	Id.; rain falling to N.	⊖
	4	583	56·2	52·2	4·0	0·5	0·1	25	27 : — : —	9·9	Id.; shower^{1} since 3h.	
	5	587	58·8	51·8	7·0	0·7	0·8	29	28 : 28 : —	9·5	Dark scud, cir.-cum. scud; cum.-str. and nimbi, shower^{1}	
	6	590	57·9	52·2	5·7	0·4	0·2	30	28 : 28 : —	9·8	Scud and cir.-str. scud; cum.-str. on hor.; shower$^{0·2}$	
	7	590	57·0	51·2	5·8	0·3	0·1	28	28 : 28 : —	9·9	Id.; mottled cirri; cumuli.	⊖
	8	592	56·8	51·0	5·8	0·3	0·3	28		8·5	Id.; loose cirro-cumuli to W.	⊖
	9	602	53·6	49·3	4·3	0·1	0·1	28	24 : 27 : —	9·0	Scud; cirro-stratous scud; cirri and cirro-strati.	
	10	612	51·8	48·2	3·6	0·1	0·0	26		9·5	Nearly as before; sky milky.	
	11	615	49·1	46·9	2·2	0·0	0·0	25	24 : — : —	9·5	Scud; cirro-strati to N.	
	12	615	47·7	45·5	2·2	0·0	0·0	20		2·0	Clear in zenith and to N.	
	13	29·613	45·8	43·4	2·4	0·0	0·0			2·0	Cirro-strati to N.	
	14	610	45·0	44·0	1·0	0·0	0·0			3·0	Id.; stars faint.	
	15	603	46·2	44·3	1·9	0·0	0·0	20	— : 28 : —	4·0	Cir.-cum., cir.-str., cir. haze; dense clouds to NW.	☽
	16	585	46·4	44·7	1·7	0·1	0·0	17	— : 25 : —	9·0	Cir.-cum. scud; cirri to E., tinged with red.	
	17	584	46·9	44·7	2·2	0·1	0·0	18	— : 24 : —	9·9	Id.; cir.-str. and cirrous haze to W.	
	18	574	47·7	45·7	2·0	0·0	0·0	18	— : 24 : —	9·9	Cirro-stratous scud to S.; cirro-strati to E. and W.	
	19	561	50·3	48·0	2·3	0·0	0·0	18	— : 18 : —	10·0	Dense wavy cirro-strati and cirro-stratous scud.	
	20	536	53·0	50·0	3·0	0·1	0·0	16	— : 22 : —	10·0	Id.	
	21	514	57·3	53·0	4·3	0·1	0·1	20	19 : 19 : —	10·0	Scud and cirro-strati.	
	22	499	56·8	52·3	4·5	0·3	0·1	20	20 : — : —	10·0	Masses of scud; dense cirro-strati; loose cumuli to E.	
	23	470	56·9	54·0	2·9	0·2	0·0			10·0	Dense mass of cirro-stratus and scud.	
13	0	436	57·0	54·1	2·9	0·0	0·0		18 : 18 : —	10·0	Thick scud and cirro-stratus; rain$^{0·2}$	
	1	413	57·0	56·6	0·4	0·5	0·2	17	18 : 18 : —	10·0	Id.; rain^{1}	

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

July 11d 19h. The upper parts of the lower scud moving NW. ½ N.(28½), and the under portions from NW. ½ W. (27½).

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
13	2	29·371	58·4	56·8	1·6	0·5	0·3	18	19 : 19 : —	10·0	Thick scud and cirro-stratus; rain$^{0·2}$
	3	330	56·2	54·9	1·3	0·5	0·1	18	18 : 18 : —	10·0	Id.; rain^{1}
	4	277	56·7	55·2	1·5	0·3	0·1	17	18 : 18 : —	10·0	Id.; rain^{2}
	5	216	54·9	53·6	1·3	0·1	0·1	14	16 : — : —	10·0	Patches of loose scud; dense clouds above; rain^{3}
	6	142	53·0	52·4	0·6	0·0	0·3	8	14 : — : —	10·0	Thick scud; rain^{3}
	7	074	53·3	52·2	1·1	0·4	0·1	8	13 : — : —	10·0	Id.; rain^{2}
	8	29·023	55·6	53·6	2·0	0·4	0·0	16	20 : 24 : —	9·3	Scud in two currents; loose cirro-cumuli above.
	9	28·996	56·1	55·3	0·8	0·1	0·2	20	23 : 24 : —	8·5	Loose scud and cumuli; cirro-cumulous scud; showers.
	10	977	55·5	54·7	0·8	0·2	0·2	22	23 : 22 : —	7·0	Scud; cirro-stratous scud; loose cumuli on horizon.
	11	969	53·7	52·7	1·0	0·2	0·2	20	22 : — : —	1·0	Loose scud and cirro-stratous scud near horizon.
	12	28·959	53·2	52·0	1·2	0·1	0·1	21	23 : — : —	2·5	Scud; at 12h 35m barometer 28·945.
14	0	29·135	...	...	...	2·6	2·2	30		......	Sunday—showers A.M. and P.M. [shine.
	5	377	...	...	...	...	...			......	Cir.-str. and scud during the day, with occasional sun-
	13	29·479	48·3	47·6	0·7	2·9	0·0		24 : — : —	2·5	Loose scud; cir.-str. to N.; rain about 10h or 11h.
	14	479	44·8	44·6	0·2	0·0	0·0	18		1·0	Scud to E.; cirro-strati and cirri to N.
	15	472	43·4	43·3	0·1	0·0	0·0	20		0·5	Cirro-strati to E. and N.; cirri to N.; heavy dew.
	16	474	41·3	41·1	0·2	0·0	0·0			0·5	Scud and cumuli; patches of cirro-strati to W.
	17	494	41·6	41·0	†0·6	0·0	0·0	20	22 : — : 22	0·8	Cirri and cirrous haze; scud, cirro-strati; stratus.
	18	492	44·3	43·4	0·9	0·1	0·0	22	— : 24 : 24	3·5	Cirro-strati, woolly cirri; scud on Cheviot.
	19	502	47·0	45·8	1·2	0·0	0·0	20	— : — : 22	8·5	Woolly and diffuse cirri; cir.-str. cum. on S. hor. ⊖
	20	494	50·5	48·4	2·1	0·0	0·0	24	— : 23 : —	8·8	Cir.-cum. scud; woolly and diffuse cirri; cir. haze. ⊖
	21	489	53·4	49·2	↓4·2	0·1	0·1	20	23 : — : —	9·9	Scud; loose cumuli on hor.; cir.-str.; rain^{1} at 21h 15m.
	22	499	51·8	50·1	1·7	0·1	0·0	20	23 : — : —	10·0	As before.
	23	504	51·8	50·2	1·6	0·1	0·0	18		10·0	Scud; cirro-stratus; rain$^{0·5-1·0}$
15	0	496	56·2	52·6	3·6	0·0	0·0	24	18 : — : —	9·9	Scud and loose cumuli; cirro-strati and cirri. ⊖
	1	499	60·9	54·7	6·2	0·0	0·0	24	19 : — : —	10·0	As before; clouds moving very slowly.
	2	513	53·9	50·8	3·1	0·7	0·7	30	26 : 23 : —	9·5	Scud; mass of woolly cirro-strati; rain$^{0·2}$ ●
	3	521	54·9	50·0	4·9	0·5	0·5	28	25 : — : —	9·5	Id.; id. ●
	4	527	57·3	50·9	6·4	0·3	0·2	29	26 : — : —	9·5	Id.; id. ⦶
	5	536	57·8	50·8	7·0	0·4	0·3	30	31 : 26 : —	7·5	Loose cum.; cir.-cum.-str.; cum.-str. on E. hor. ⊙
	6	544	59·6	52·3	†7·3	0·2	0·1	30	29 : 30 : 30	3·5	Cumuli; cirro-strati and masses of cirri. ⊙
	7	549	57·3	50·3	7·0	0·4	0·0	31	29 : — : —	4·0	Scud and cumuli. ⊙
	8	574	52·0	49·5	↓2·5	0·7	0·3	20		9·0	Id.; rain$^{3-6}$, with hail from 7h 55m till
	9	585	50·1	49·1	1·0	0·1	0·0	28	26 : — : —	3·5	Scud; cum.-str. on horizon. [8h 12m, rainbow.
	10	602	49·3	47·1	2·2	0·0	0·0	24		1·0	Cirro-stratous scud; cumulo-strati on E. horizon.
	11	622	45·0	44·0	1·0	0·0	0·0	20		0·5	Cirro-strati and scud on S. and E. horizon.
	12	633	47·2	45·2	2·0	0·0	0·0	20		0·2	Patches of cirro-strati, scud, and cumuli.
	13	29·636	45·1	44·1	1·0	0·0	0·0	18		0·2	Patches of cirro-strati, scud, and cumuli.
	14	630	46·0	44·8	1·2	0·2	0·1	22	24 : — : —	5·0	Scud.
	15	636	45·8	44·8	1·0	0·1	0·0	20	— : 26 : —	5·0	Cirro-cumulous scud; cirro-strati and loose scud.
	16	644	47·5	45·5	2·0	0·2	0·1	18	— : — : 28	1·5	Woolly cirri; id.
	17	651	43·2	42·4	†0·8	0·1	0·0	20	— : 29 : —	4·0	Cir.-str. scud; cir.-str.; cum.-str. on N. and E. hor.
	18	663	48·1	46·1	2·0	0·1	0·1	21	— : 26 : —	1·5	Id.; cirro-strati and cumuli on horizon. ⊙
	19	673	49·9	47·4	2·5	0·2	0·1	22		0·5	Patches of scud; cirro-strati on horizon. ⊙
	20	678	53·1	49·3	3·8	0·5	0·5	24	26 : — : —	1·5	Masses of loose scud and cumuli; cirro-strati. ⊙
	21	680	55·8	50·8	↓5·0	0·3	0·2	23	28 : — : —	2·5	Loose scud and ragged-edged cumuli.
	22	683	58·1	51·2	6·9	0·4	0·4	26	25 : — : —	6·0	Loose cumuli; nimbus to SSW. ⊙
	23	684	59·4	51·2	8·2	0·3	0·3	27	26 : — : —	4·0	Cumuli; id. ⊙
16	0	685	59·5	52·0	7·5	0·5	0·2	30	25 : — : —	7·0	Loose cumuli, cumulo-strati, and nimbi to S.
	1	689	61·7	52·7	9·0	0·3	0·1	22	26 : — : —	3·5	Cumuli; nimbi and cumulo-strati to S. ⊙
	2	693	62·9	53·8	9·1	0·5	0·6	30	26 : — : —	7·0	Cum. having an internal motion; cum.-str., nimbi. ⊙
	3	696	63·2	54·6	8·6	0·7	0·3	24	26 : — : —	5·0	Cumuli; cirro-strati, cirri, dense cum.-str., nimbi. ⊙
	4	694	65·1	54·1	11·0	0·4	0·3	30	22 : 26 : 24	8·5	Thick scud; cum.; patch of cir.-str.; cum.-str., nimbi.
	5	694	61·5	53·1	8·4	0·2	0·0	0	26 : — : —	7·0	Loose cumuli, piles of cumulo-strati and nimbi. ⊖
	6	695	61·2	52·9	†8·3	0·3	0·5	31	21 : 28 : —	7·5	Thick scud; cumuli; cum.-str. and cir.-str on hor.

July 13d 3h 30m. New floss silk put on wet-bulb thermometer.
July 14d 5h. The observation made at 5h 20m.
July 15d 21h. Loose scud and ragged-edged cumuli which get into patches and ultimately disappear on approaching the zenith.
July 16d 5h. Immense piles of cumulo-strati and nimbi on horizon; one great nimbus extending from N., round by E. to SW; electric-looking throughout the day.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1^h.	10^m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
16	7	29·698	60·6	52·1	8·5	0·6	0·3	31		1·5	Cum.-str. and nimbi on hor.; a few large hailstones. ⊙
	8	714	56·0	50·9	↓5·1	0·3	0·0	28		2·0	Id. ⊙
	9	727	53·8	49·8	4·0	0·0	0·0	20	20 : 25 : —	3·0	Thick scud; thin cir.-cum. scud; cum.-str. on hor.
	10	745	49·8	47·2	2·6	0·0	0·0	12		1·0	Scud, cirro-strati, sheet of woolly cirri; cumulo-strati.
	11	751	48·1	46·0	2·1	0·0	0·0	20		0·8	Cirro-strati and cirri radiating from NW.
	12	757	45·6	44·7	0·9	0·1	0·0	14		1·0	Id.; scud.
	13	29·760	44·8	44·1	0·7	0·1	0·0	20		2·0	Cirro-strati, cirro-cumuli, and cirri.
	14	759	42·9	42·7	0·2	0·0	0·0	18		0·8	Cirro-strati and cirri.
	15	758	41·4	41·0	0·4	0·0	0·0	18	— : 26 : 26	1·8	Loose cirro-strati and cirri.
	16	747	39·7	39·5	0·2	0·0	0·0		— : 26 : —	2·5	Cirro-stratous scud; cirri; mist rising from the river.
	17	742	40·2	39·9	†0·3	0·0	0·0	14	— : 24 : —	1·5	As before; fine cirri radiating from W. ⊖
	18	745	43·8	42·9	0·9	0·0	0·0	20	— : 25 : —	4·0	Loose cir.-cum.; fine woolly, mottled, and linear cirri. ⊙
	19	740	50·7	47·5	3·2	0·0	0·0	20	— : 26 : —	8·0	As before. ⊖
	20	739	54·6	51·7	2·9	0·2	0·1	20	— : 26 : —	9·5	Id.; patches of scud to S. ⦶
	21	725	56·9	52·9	↓4·0	0·3	0·2	20	— : 22 : —	6·0	Cirri, cir.-str., and cir.-cum.; cum. and scud on hor. ⊙
	22	712	61·2	55·2	6·0	0·3	0·3	18	24 : 25 : 25	8·5	Loose cum. and sc.; curled and woolly cir.; cum.-str. ⊖
	23	697	61·1	53·7	7·4	0·1	0·1	23	22 : — : —	9·0	Scud; cumuli as before. ⊖
17	0	688	64·2	58·6	5·6	0·3	0·1	18	24 : — : —	9·9	Id.; cumuli, cumulo-strati, and cirro-strati.
	1	688	60·0	54·1	5·9	0·1	0·1	28	23 : — : —	9·9	Id.; loose cumuli, cirri; a few drops of rain.
	2	680	64·2	55·9	8·3	0·5	0·5	20	— : 24 : —	9·0	Cirro-cumulo-strati; scud and cumuli on horizon. ⦶
	3	669	61·7	54·2	7·5	0·5	0·4	24	24 : — : —	9·5	Scud and loose cumuli; cumulo-strati and cirro-strati.
	4	655	62·0	54·5	7·5	0·2	0·0	23	24 : — : —	9·9	Id.; id.
	5	636	62·5	55·2	7·3	0·2	0·1	24	21 : — : 18	9·8	Scud; cirri, cir.-str., cum.-str., nimbi; rain to NW.
	6	638	54·6	53·2	1·4	0·3	0·0	16	20 : — : —	10·0	Id.; nimbi, cirro-strati; rain^3
	7	632	52·9	51·8	1·1	0·3	0·0	24	21 : — : —	10·0	Id.; cir.-str. scud; loose cumuli, cir.-str.; showers.
	8	617	53·2	52·8	0·4	0·0	0·0	22	21 : — : —	9·9	Id.; cum., cum-str., cirri; greenish sky; showers.
	9	606	51·9	50·4	1·5	0·0	0·0	20	— : 23 : 23	9·8	Woolly cirri, cirro-strati, scud; showers.
	10	594	51·2	50·3	0·9	0·1	0·0	18		9·9	Scud; rain$^{0·5}$
	11	586	50·0	49·2	0·8	0·1	0·0	20		10·0	Id.; cirro-strati.
	12	579	50·8	49·6	1·2	0·1	0·0			10·0	Id.; id.
	13	29·561	49·9	49·2	0·7	0·0	0·0			9·7	Scud; cirro-strati.
	14	549	49·7	49·0	0·7	0·0	0·0			9·8	Id.; id.
	15	531	49·8	49·0	0·8	0·1	0·0	22		9·9	Id.; id.
	16	518	50·0	49·2	0·8	0·0	0·0	20	30 : — : —	10·0	Id.; id.; drops of rain.
	17	513	50·3	49·2	1·1	0·0	0·0	23	26 : — : —	9·9	Id.; id.; id.
	18	505	51·2	49·9	1·3	0·0	0·0	20	28 : — : —	9·8	Id.; id.; id.
	19	502	54·5	51·0	†3·5	0·0	0·0	20	— : 23 : —	9·8	Irregular mass of cir.-str.; patches of scud on hor. ⊙
	20	500	55·2	51·9	3·3	0·0	0·0	20	— : 26 : —	9·8	Id.; id.
	21	489	58·8	53·3	↓5·5	0·1	0·0	21		9·9	Patches of scud to E.; cirro-strati; drops of rain. ●
	22	484	60·4	54·4	6·0	0·1	0·0	24	— : 24 : —	9·9	Cirro-cumulous scud; loose cumuli on horizon. ⊖
	23	478	62·5	54·0	8·5	0·2	0·2	28	24 : — : —	9·9	Scud; loose cumuli; cirri and cirro-strati to N.
18	0	468	61·1	51·3	9·8	0·5	0·2	23	24 : — : —	9·8	Scud and loose cumuli; cirri and cirro-strati. ⊖
	1	462	63·8	54·2	9·6	0·4	0·2	1	— : 24 : —	9·5	Cirro-cumulous scud; cirri; loose cumuli. ⊖
	2	455	63·5	53·5	10·0	0·2	0·0	26	26 : — : —	9·5	Scud and loose cumuli; fine woolly cirri and cir. haze ⦶
	3	447	60·1	52·9	7·2	0·2	0·0	28	28 : — : —	10·0	Thick scud; cirrous haze; cumulo-strati.
	4	440	59·7	54·0	5·7	0·2	0·1	2	26 : 26 : —	9·8	Scud, cir.-str. scud; cir.-str., cum.-str.; haze.* ●
	5	440	57·7	53·2	4·5	0·3	0·4	2	28 : 7 : —	10·0	Scud in var. currents; nimbi, cir-str.; thunder to NW.*
	6	441	52·6	52·0	0·6	0·4	0·0	8	26 : 8 : —	9·9	Patches of loose scud; dense cir.-str.; thunder; rain$^{2-4}$*
	7	445	54·3	53·0	1·3	0·1	0·0	12	6, 2, 26 : —	10·0	Three cur. of scud; cir.-str., cum.; thunder till 6^h 40^m.
	8	448	53·9	52·9	1·0	0·0	0·0	22	24, 30, 4 : 2 : —	10·0	Loose vapour; two currents of scud; cir.-str.; cum.
	9	451	51·9	51·0	0·9	0·0	0·0	22	2 : — : —	10·0	Thick heavy scud; loose scud below; cirro-strati.
	10	460	51·4	50·6	0·8	0·2	0·2	2	3 : — : —	10·0	Thick scud.
	11	469	50·1	48·8	1·3	0·3	0·4	2		10·0	Id.
	12	484	48·5	47·0	1·5	0·3	0·1	3		10·0	Id.
	13	29·494	47·8	46·8	1·0	0·1	0·0	2		10·0	Thick scud; rather broken to NNE.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

* See additional meteorological notes after the *Hourly Meteorological Observations.*

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
18 14	29·495	47·9	47·1	0·8	0·0	0·0	14		10·0	Thick scud; rather broken to NNE.
15	487	48·1	47·3	0·8	0·0	0·0	24		10·0	Id.; id.
16	477	48·1	46·7	1·4	0·0	0·0	31	30 : — : —	10·0	Scud; cirrous haze to NNE. [on Cheviot.
17	485	47·9	46·5	1·4	0·0	0·0	30	30 : — : —	10·0	Thick muddy scud; cirri and cir. haze to NE., strati
18	498	49·0	47·7	1·3	0·0	0·0	20	30 : — : —	9·8	As before; threads of cir.-str. scud forming below.
19	511	50·3	47·6	2·7	0·0	0·0	28	30 : — : —	10·0	Thick cir.-str. scud and wavy cir.-str.; loose scud on Cheviot.
20	524	52·6	49·3	3·3	0·0	0·0		30 : — : —	9·9	Thick cir.-str. scud; loose scud to E.; sky to SW.
21	531	54·0	49·5	4·5	0·0	0·0	28	30 : — : —	10·0	Id.; id.
22	546	52·7	50·0	2·7	0·3	0·2	28	30 : — : —	10·0	Loose scud; thick cirro-strati.
23	550	57·3	53·0	4·3	0·1	0·0	24	30 : 26 : —	9·9	Id.; cir.-str. scud; cirri; loose cum. on hor.
19 0	559	58·3	52·2	6·1	0·2	0·1	30	30 : — : —	9·9	Scud and loose cumuli; cir.-cum. scud.
1	563	57·9	50·9	7·0	0·2	0·2	1	29 : — : —	9·3	Id.; cir.-cum., cir.-str., cirri. ⊙
2	567	58·5	50·8	7·7	0·3	0·0	0	29 : — : —	8·0	Id.; linear and woolly cirri.
3	575	61·0	52·0	9·0	0·4	0·2	0	29 : — : —	9·0	Id.; cir.-cum. scud; woolly cirri.
4	579	63·0	53·2	9·8	0·4	0·6	0	30 : — : —	9·0	Id.; id. ⊖
5	592	60·4	52·2	8·2	0·4	0·5	31	30 : — : —	8·0	Id.; cir.-cum.-str.; rainbow. ⦶
6	604	58·1	51·0	7·1	0·5	1·0	30	30 : — : —	9·2	Scud, loose cumuli, cumulo-strati; rain[2] at 6h 8m.
7	633	55·0	51·3	3·7	0·8	0·1	30	29 : — : —	9·0	Id., id., id. ⊖
8	648	52·9	50·2	2·7	0·4	0·0	30	30 : — : —	9·7	Id.; cirro-cumulous scud; rain[2]
9	667	51·8	50·4	1·4	0·0	0·0		29 : — : —	7·0	Id., tinged red to SE.; loose scud on Cheviot.
10	693	51·2	49·7	1·5	0·1	0·0	30	29 : — : —	9·8	Id.
11	709	51·0	49·0	2·0	0·0	0·0	30		6·0	Id.; cirri to N.
12	724	49·0	47·2	1·8	0·0	0·0	30		8·0	Id.
13	29·740	49·8	47·0	2·8	0·1	0·0			9·0	Scud.
14	750	49·0	48·0	1·0	0·0	0·0	28		9·9	Id.; sky to NE.
15	757	49·1	48·1	1·0	0·0	0·0	25	28 : — : —	9·0	Id.; cirri and cirro-strati to NE.
16	769	47·9	47·2	0·7	0·0	0·0	23	30 : — : —	5·0	Cirro-cumulous scud; cirri and cirro-strati; loose scud.
17	798	45·7	44·8	†0·9	0·0	0·0	25		1·0	Cumuli and cumulo-strati; scud on Cheviot. ⊙
18	820	46·9	45·8	1·1	0·0	0·0	25	— : 26 : —	1·0	Cirro-cumuli; scud on Cheviot and on horizon. ⊙
19	828	49·7	47·2	2·5	0·3	0·2	30		0·5	Cirro-cumulous scud and loose cumuli to NE. ⊙
20	848	52·6	48·7	3·9	0·3	0·2	0		0·8	Loose cumuli and masses of cirro-strati. ⊙
21	865	54·4	48·9	↓5·5	0·2	0·2	0	28 : — : —	9·7	Loose cumuli; loose cir.-cum. and cir.-cum.-str. ⊖
22	872	56·7	49·3	7·4	0·3	0·2	3	28 : — : —	7·0	Id.; cirro-cumulous scud. ⊙
23	890	57·0	50·0	7·0	0·3	0·2	2	28 : — : —	8·0	Id.; id. ⊖
20 0	907	60·0	52·4	7·6	0·3	0·2	9	27 : — : —	8·0	Scud and loose cumuli. ⊙
1	920	59·6	52·3	7·3	0·3	0·1	8	27 : — : —	9·5	Id.; cirro-strati to NE. ⊖
2	936	63·7	55·2	8·5	0·1	0·1	6	27 : — : —	7·0	Id.; id.
3	941	60·4	52·6	7·8	0·2	0·1	2	25 : — : 28	5·0	Id.; woolly and linear cirri. ⊙
4	940	60·4	52·0	8·4	0·1	0·1	12	24 : — : 28	3·0	As before; solar halo at 3h 30m. ⊙
5	935	61·3	52·2	9·1	0·1	0·0	6	22 : — : 28	3·0	Id. ⊙
6	940	59·4	52·7	†6·7	0·2	0·1	4	24 : — : —	3·0	Scud and loose cumuli; cirri. ●
7	945	57·8	51·5	6·3	0·4	0·4	4	— : 23 : 30	7·0	Cirro-cumulous scud; fine cirri. ●
8	969	55·3	50·9	4·4	0·2	0·1	4	22 : — : —	9·0	Scud; cirrous clouds.
9	967	52·0	48·9	↓3·1	0·2	0·0	4		2·0	Cirro-cumulous scud to W., tinged with red; cirri.
10	976	51·4	48·4	3·0	0·3	0·2	16	24 : — : —	3·0	Scud; cirro-cumuli; woolly cirri; cirro-strati.
11	976	50·2	47·6	2·6	0·3	0·2	16	— : 28 : —	7·0	Cirro-cumuli; cirri.
12	982	49·9	47·6	2·3	0·2	0·0	17		8·5	Cirro-strati and cirro-cumuli.
23	29·928	...	...	...	0·5	...	18	18 : — : —	......	Scud; rain[1-3] from 20h till about 2h.
21 13	29·892	59·0	57·5	1·5	1·2	0·1	21		10·0	Scud; rather dark.
14	887	58·6	57·5	1·1	0·3	0·3	20		10·0	Id.
15	891	58·3	57·5	0·8	0·3	0·0	16		10·0	Id.
16	877	58·3	57·3	1·0	0·0	0·0	17		10·0	Id., nearly uniform.
17	867	58·3	57·3	1·0	0·1	0·1	19	20 : — : —	10·0	Id.
18	869	59·0	57·5	1·5	0·3	0·2	20	20 : — : —	10·0	Id.; cirro-stratus.
19	876	60·7	58·4	2·3	0·4	0·3	20	20 : — : —	10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	Baro-meter at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
21 20	29·885	62·2	59·4	2·8	0·4	0·4	20	20 : — : —	10·0	Scud; cirro-stratus.
21	885	63·7	60·0	3·7	0·9	0·5	21	20 : — : —	9·8	Id.
22	885	66·3	61·7	4·6	1·4	0·8	20	20 : — : —	9·5	Loose scud. ⊖
23	873	65·8	61·7	4·1	1·3	0·3	21	20 : — : —	3·0	Id. ⊙
22 0	874	67·9	63·0	4·9	0·5	0·2	20	20 : — : —	0·5	Masses of loose scud; cirro-strati on E. horizon. ⊙
1	877	66·6	60·9	5·7	0·8	0·1	20		0·5	Cumuli on E. and N. horizon. ⊙
2	865	68·2	60·0	8·2	1·3	0·9	20		0·5	Id. ⊙
3	860	70·3	61·7	8·6	0·6	0·3	20		0·2	A few cumuli low on E. horizon; very clear. ⊙
4	846	72·1	62·0	10·1	0·6	0·6	20		0·0	A single patch of cumuli to E.; very clear. ⊙
5	837	71·0	61·6	†9·4	0·5	0·3	20		0·0	Perfectly clear. ⊙
6	828	70·2	60·3	9·9	0·3	0·2	19		0·0	Id. ⊙
7	830	68·3	58·1	10·2	0·4	0·2	19		0·0	Id. ⊙
8	835	66·0	58·9	↓7·1	0·2	0·0	20		0·0	Id. ⊙
9	841	60·2	56·3	3·9	0·0	0·0	15		0·0	Id. ☽
10	824	58·8	56·8	2·0	0·0	0·0	20		0·0	Id. ☽
11	827	54·6	53·3	1·3	0·3	0·0	24		0·0	Id.
12	831	52·0	51·4	0·6	0·0	0·0			0·0	Id.
13	29·833	50·3	49·9	0·4	0·0	0·0			0·0	Perfectly clear.
14	821	49·2	48·8	0·4	0·0	0·0			0·2	Patches of cloud to SW.; cirro-strati and haze to E.
15	819	48·2	48·0	0·2	0·0	0·0	22		0·3	Cir.-str., cir.-cum.; brown haze on E. hor.; much dew.
16	807	47·8	47·6	0·2	0·0	0·0	20		0·5	Cirri and cirrous haze on hor.; cirro-strati to NW.
17	797	47·2	47·0	0·2	0·0	0·0	20		0·5	Cirri, cirrous haze, and thin cirro-strati on hor. ⊙
18	789	48·9	48·4	†0·5	0·0	0·0			0·5	Cirro-strati to SW.; cirrous haze on horizon. ⊙
19	801	52·0	50·8	1·2	0·0	0·0			0 5	Id.; id. ⊙
20	795	56·4	54·0	2·4	0·0	0·0	24		0·2	Id.; id. ⊙
21	786	60·7	57·2	↓3·5	0·0	0·0	4		0·5	Haze on horizon; cirro-strati to W. and SW. ⊙
22	770	65·9	60·0	5·9	0·0	0·0	7		0·7	Id.; id. ⊙
23	765	70·8	63·2	7·6	0·0	0·9	7	— : — : 16	2·5	Woolly cirri; cumuli and haze on horizon. ⊙
23 0	752	77·2	65·0	12·2	0·2	0·6	14		2·0	Cirri and cir. haze; cum.-str. and cir.-str.; very hazy. ⊙
1	740	78·8	67·2	11·6	0·4	0·2	14	— : — : 15	4·0	Id.; id.; id. ⦶
2	730	79·0	67·6	11·4	0·4	0·2	14	— : 14 : —	8·0	Cir.-cum., cir.-str., and general haze; patches of scud. ⦶
3	729	78·7	67·9	10·8	0·3	0·1	17	15 : — : —	9·0	Scud; cirri, cirro-strati, and cirrous haze.
4	731	78·6	67·6	11·0	0·2	0·3	16		9·0	As before; a few drops of rain.
5	723	76·0	67·6	8·4	0·2	0·1	12	— : 16 : 16	9·0	Cir.-cum., cirri, cir.-str.; electric-looking cloud to W.
6	708	74·9	64·9	10·0	0·5	0·4	12	— : 16 : —	7·5	Cirro-strati, cirro-cumuli, and woolly cirri. ⊖
7	711	72·1	63·2	8·9	0·3	0·2	11	— : 16 : —	9·0	Loose cirro-cumuli, cirro-strati, and woolly cirri. ⊙
8	715	70·0	61·7	8·3	0·3	0·1	6	— : 15 : —	9·0	Cirro-cumulous scud, cirro-cumuli, and cirro-strati. ⊖
9	717	67·9	60·7	7·2	0·1	0·0	1	— : 16 : —	7·0	As before; patches of mottled cirri; haze to E.
10	729	63·7	59·0	4·7	0·1	0·0	24	— : 16 : —	7·0	Id.; cirri to W.
11	725	62·9	58·9	4·0	0·0	0·0			8·0	Cirro-cumulous scud; cirri and cirro-strati.
12	732	62·9	58·9	4·0	0·0	0·0	8		8·0	Id.; id.
13	29·723	62·9	57·6	5·3	0·1	0·0	10		9·0	Cirro-cumulous scud; cirri and cirro-strati.
14	717	62·1	57·7	4·4	0·1	0·0	6		9·0	Id.; id.
15	700	60·7	56·7	4·0	0·0	0·0	23	— : 14 : —	8·5	Cir.-cum., cirri, cir.-str.; clouds tinged red to E.
16	694	59·0	56·0	3·0	0·0	0·0	6	— : 14 : —	7·0	Id., id., id.; haze on E. horizon.
17	699	59·1	56·0	†3·1	0·0	0·0	2	— : 14 : —	8·0	Id., cirri, cirrous haze. ⦶
18	700	59·3	56·3	↓3·0	0·0	0·0	6		8·0	Id., cir.-cum.-str., cir.-str., and cir. haze. ⊙
19	711	61·3	57·9	3·4	0·0	0·0	4	— : 15 : —	8·5	Cirro-cumuli, cirro-strati, and cirrous haze.
20	716	66·1	59·7	6·4	0·1	0·0	12	— : 14 : —	9·0	As before; masses of loose cumuli below.
21	731	66·1	60·1	6·0	0·0	0·0		— : 14 : —	9·9	Thick scud; cir.-str., cir.-cum., cirri, cirrous haze.
22	741	65·2	60·1	5·1	0·0	0·0	25	— : 14 : —	10·0	Thick cir.-str. scud; cirro.-strati, cirrous haze; rain$^{0·2}$
23	752	60·9	59·9	1·0	1·0	0·2	25	— : 16 : —	10·0	Id.; rain^{3} since 22^{h} 35^{m} when wind was S.
24 0	746	60·2	60·0	0·2	0·0	0·0			10·0	Rain$^{2-4}$ since 23^{h}.
1	754	61·1	60·6	0·5	0·1	0·1	4	4 : 12 : —	10·0	Two currents of scud; dense cirro-strati; rain^{2}
2	757	64·4	62·2	2·2	0·1	0·0	0	12 : — : —	10·0	Loose scud; dense cirro-strati.
3	759	64·9	62·7	2·2	0·0	0·0	4	4 : 12 : —	10·0	Id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

July 23^{d} 2^{h} 20^{m}. The highest observed reading of the dry thermometer was 81°·9. At 2^{h} 50^{m} a peal of thunder was heard by Sir Thomas Brisbane.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
24 4	29·763	62·3	60·9	1·4	0·0	0·0		12 : — : —	10·0	Loose scud; dense cirro-strati.
5	763	62·4	61·6	0·8	0·2	0·0	4	14 : — : —	10·0	Id.
6	755	64·7	63·1	1·6	0·1	0·1	16	16 : — : —	10·0	Id.; id.
7	764	65·8	63·0	2·8	0·0	0·0	7	16 : — : —	10·0	Id.; woolly cirri. ●
8	774	63·6	62·1	1·5	0·0	0·0		16 : — : —	10·0	Id.; cirrous clouds; dull and hazy on horizon.
9	783	62·4	61·8	0·6	0·0	0·0		16 : — : —	10·0	Id.; id.; id.
10	784	61·0	60·6	0·4	0·1	0·0			10·0	Id.
11	792	59·1	59·0	0·1	0·0	0·0	4		7·0	Scud; hazy.
12	792	59·0	58·8	0·2	0·0	0·0			9·5	Id.; very hazy.
13	29·786	59·0	58·8	0·2	0·0	0·0	8		10·0	Scud; very hazy; dark.
14	789	58·8	58·7	0·1	0·0	0·0			10·0	Id.; id.
15	786	58·0	57·8	0·2	0·1	0·0			10·0	Fog.
16	777	57·1	57·0	0·1	0·1	0·1		4 : — : —	9·2	Scud; foggy.
17	775	56·6	56·2	0·4	0·1	0·0	2	5, 14 : 15 : —	8·2	Stratus; smoky scud; cir.-cum. scud and cum. on hor.
18	781	56·8	56·3	0·5	0·0	0·0	2	6 : 14 : —	7·5	Stratus clearing off variously; cir.-cum. and cirri.
19	776	60·2	58·8	†1·4	0·0	0·0	4	— : 14 : —	7·5	Strati to E.; cumuli and loose cirro-strati.
20	773	61·4	59·5	1·9	0·0	0·0	8	— : 14 : —	1·8	Cir.-str. scud, cumuli, cum.-str.; sheets of cirri. ⊙
21	771	65·9	60·3	↓5·6	0·1	0·1	12	14 : 15 : —	6·0	Loose cumuli; cir.-cum., cir.-str.; tufts of cirri. ●
22	757	68·2	60·0	8·2	0·2	0·3	13	15 : — : 15	6·0	Scud and loose cumuli; woolly cirri. ⊖
23	752	70·6	60·7	9·9	0·7	0·9	15	14 : — : —	8·5	Scud, cirri, and cir.-str. to E.; haze on horizon. ●
25 0	748	73·1	62·1	11·0	0·2	0·3	15	14 : — : —	9·2	Scud and ragged cumuli; cirro-strati.
1	741	70·5	61·2	9·3	1·2	0·2	10	15 : — : —	9·3	Id.; id.
2	742	69·8	61·1	8·7	0·3	0·3	12	— : 15 : —	10·0	Wavy cir.-str. and cirro-stratous scud; ragged cumuli.
3	734	69·4	60·0	9·4	0·8	0·1	12	— : 15 : —	9·2	Id.;
4	726	70·3	61·4	8·9	0·3	0·2	8	— : 12 : —	9·5	Id.; cirro-cumuli.
5	716	68·8	59·3	9·5	0·3	0·2	9	— : 14 : —	9·5	Thick cirro-stratous scud; cir.-str., cirri, cumulo-strati.
6	711	69·2	58·9	10·3	0·3	0·2	10	18 : 17 : —	9·5	Cirro-stratous scud; cir.-str., piles of ragged cumuli.
7	719	67·1	57·1	10·0	0·3	0·1	15	15 : — : —	9·5	Scud; cirro-strati as before.
8	729	65·0	56·8	↓8·2	0·1	0·1	13	14 : 16 : 17	9·8	Thin scud; cirro-stratous scud; cirro-cumulo-strati.
9	727	62·8	55·9	6·9	0·0	0·0	var.	— : 13 : —	10·0	Thick cirro-strati and cirro-stratous scud.
10	730	62·0	55·0	7·0	0·0	0·0	30	— : 14 : —	10·0	Id.; red to NNE.
11	726	59·5	55·9	2·6	0·0	0·0	7		10·0	Thick scud; rain$^{0\cdot5}$
12	720	58·8	56·6	2·2	0·0	0·0			10·0	Id.; dark.
13	29·719	58·2	56·4	1·8	0·0	0·0			10·0	Thick scud; dark; rain$^{0\cdot5}$
14	724	56·5	55·7	0·8	0·1	0·0			10·0	Rain$^{1-4}$ since 13h.
15	718	56·0	55·2	0·8	0·1	0·0	28		10·0	Rain^{1}
16	715	55·2	55·0	0·2	0·0	0·0		— : 12 : —	10·0	Thick wavy cirro-stratous scud; red on NE. horizon.
17	713	55·3	55·0	0·3	0·0	0·0		— : 12 : —	10·0	Scud and thick cirro-stratus.
18	721	56·0	55·6	0·4	0·0	0·0	16	— : 12 : —	10·0	Id.
19	741	57·2	56·3	0·9	0·1	0·0	22	12 : — : —	10·0	Scud with parallel ridges; cirro-strati; rain$^{0\cdot5}$
20	751	58·4	57·7	0·7	0·0	0·0	16		10·0	Id.; rain$^{0\cdot2}$
21	760	59·3	58·1	1·2	0·0	0·0			10·0	Scud; rain$^{0\cdot2}$
22	768	60·5	58·0	2·5	0·0	0·0			10·0	Id.; thick scud on Cheviot; rain^{1}
23	786	62·2	58·4	3·8	0·0	0·0	14		10·0	Id.; cirro-strati to W.
26 0	796	63·3	58·7	4·6	0·0	0·0	30	0 : 24 : —	9·9	Loose ragged scud; cirro-stratous scud, cirro-strati.
1	801	65·3	58·2	7·1	0·0	0·1	28	0 : — : —	10·0	As before; loose cumuli on S. horizon.
2	814	67·7	60·5	7·2	0·1	0·1	31	31 : 28 : —	10·0	Scud; cirro-stratous scud; haze.
3	825	68·3	60·6	7·7	0·1	0·1	30	30 : 26 : —	9·8	Loose cumuli; cirro-cumulo-strati; haze.
4	832	67·4	60·0	7·4	0·1	0·0	31	— : 27 : —	9·8	Cir.-cum. scud; cumuli, cum.-str.; woolly cirri. ●
5	839	67·0	59·6	7·4	0·2	0·2	0	— : 28 : —	9·5	Id.; id., id.; id.
6	849	65·7	59·1	6·6	0·4	0·3	31	— : 28 : —	10·0	Masses of scud; cirro-cumulous scud, cirro-strati.
7	856	64·7	59·7	5·0	0·4	0·2	31	30 : — : —	9·8	Scud; cirro-cumulous scud; woolly cirri.
8	879	62·4	59·0	3·4	0·4	0·3	23	— : 28 : —	10·0	Cirro-cumulous scud and cirro-cumulo-strati.
9	887	60·7	57·7	3·0	0·4	0·2	24	— : 28 : —	10·0	Id.
10	897	60·0	57·5	2·5	0·2	0·1	28	— : 28 : —	10·0	Cirro-stratous scud.
11	899	59·9	57·2	2·7	0·1	0·0	22		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

25d 6h. Thermometer case removed (†) before this observation, and returned (↓), as indicated, after 8h.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
26 12	29·904	58·7	57·2	1·5	0·0	0·0	17		10·0	Scud.
13	29·910	57·9	56·6	1·3	0·0	0·0	16		9·8	Sky in zenith.
14	917	57·8	56·3	1·5	0·0	0·0	20		9·0	A few stars seen in zenith.
15	917	56·1	55·3	0·8	0·0	0·0	8		9·0	Cirro-cumuli; cir.-str. to E.; dense cloud to W.
16	919	55·0	54·3	0·7	0·0	0·0	4	— : 28 : —	7·0	Thin scud; cirro-cumulo-strati, cirro-strati.
17	937	55·7	55·0	0·7	0·0	0·0	4	0 : 0 : —	8·5	Id.; very thick scud; id.
18	952	58·8	56·7	†2·1	0·0	0·0	22	0 : — : —	9·0	Scud; cir.-str. to W.; loose cum. to S.; haze to E. ⦶
19	965	59·5	57·4	2·1	0·0	0·0	22	— : 0 : —	9·7	Thick cirro-cumulo-strati; loose scud to E.
20	966	61·8	58·7	3·1	0·0	0·0	24	— : 0 : —	9·0	Cir.-cum.-str. and cirro-cumuli; loose cumuli to E.
21	967	64·9	59·3	⸸5·6	0·1	0·1	26	31 : 27 : —	9·0	Scud and loose cumuli; thick sheet of woolly cir.-str. ⊙
22	963	67·1	60·6	6·5	0·1	0·1	26	— : 28 : —	9·8	Scud; cirro-cumulous scud and cirro-cumuli.
23	955	68·1	62·2	5·9	0·1	0·1	1	1 : 30 : 28	7·0	Two currents of scud; woolly cirri.
27 0	969	70·4	63·9	6·5	0·0	0·0	9	26 : — : —	10·0	Scud. [and S.; nimbi. ⊙
1	963	70·7	63·9	6·8	0·1	0·0	12	— : 24 : —	7·0	Cir.-cum.-str.; large piles of cum.; cum.-str. to N., W.,
2	958	72·0	63·7	8·3	0·1	0·0	18	22 : — : —	8·5	Scud and loose cum.; cir.-cum.-str.; rain to NW.
3	954	71·6	65·4	6·2	0·1	0·0	20	— : 24 : —	8·5	Cir.-cum. scud; cum., cum.-str., nimbi; woolly cirri. ⊙
4	948	72·6	65·0	7·6	0·1	0·0	12	— : 22 : —	7·0	Id.; loose cum. and cum.-str.; woolly cirri. ⊙
5	940	69·7	63·0	6·7	0·0	0·0		22 : — : —	9·0	Thick scud; loose cum., cir.-st., woolly cir.; drops of rain.
6	936	69·9	64·5	5·4	0·1	0·0	20	— : — : 28	6·5	Curled and woolly cirri; cum. and cum.-str. on hor. ⊖
7	937	68·0	61·3	†6·7	0·1	0·1	20	24 : — : 27	8·5	Scud; diffuse cirri; cirro-cumuli rad. from N by W.;
8	947	65·0	61·5	3·5	0·2	0·1	23	— : 28 : —	7·5	Cir.-cum.; cirri; cir.-str. on hor. [cum.-str. ⦶
9	955	62·3	59·0	⸸3·3	0·4	0·2	23	— : 28 : —	7·0	Id.; diffuse cirri and cirro-strati. ☽
10	954	59·4	57·2	2·2	0·2	0·1	16		6·0	Id.; diffuse cirri. ☽
11	964	58·3	56·8	1·5	0·1	0·0	18	— : 24 : —	8·0	Thick sheet of cirro-strati covering the sky.
12	958	59·1	56·9	2·2	0·1	0·1	20	— : 24 : —	9·9	Cirro-cumuli, cirro-strati.
28 0	29·853	...	...	...	0·7	...	24		......	Sunday—a peal of thunder heard at 7h.
13	29·708	52·9	50·3	2·6	1·6	0·4	24	— : 24 : —	3·0	Cirro-cumulous scud; cirro-strati.
14	703	52·3	49·6	2·7	0·6	0·3	24	— : 26 : —	9·0	Id.; cirro-cumuli.
15	704	51·8	49·0	2·8	0·4	0·2	26	— : 27 : —	7·5	Id.
16	699	50·0	48·4	1·6	0·2	0·0	20	29 : — : —	8·0	Scud; cirro-strati on horizon.
17	690	50·1	48·7	1·4	0·1	0·0	20	30 : — : —	4·0	Id.
18	693	49·9	48·6	†1·3	0·0	0·0	20	30 : 30 : —	3·0	Id., cirro-cumulous scud, cirro-strati.
19	698	52·0	50·0	2·0	0·1	0·1	22	30 : — : —	2·0	Id.; cirro-stratous scud; id.
20	698	56·0	52·4	3·6	0·3	0·2	24	— : 30 : —	8·2	Cir.-str. scud; cir.-str. on hor., with cir.-cum. edges.
21	701	59·2	54·0	⸸5·2	1·5	0·9	24	— : 31 : —	9·3	Id.; cirri and cirro-strati; scud. ●
22	706	60·0	54·7	5·3	1·0	0·6	28	30 : 31 : —	9·0	Scud; cir.-cum.-str.; cumuli and cumulo-strati. ●
23	696	60·0	53·9	6·1	1·0	0·5	30	29 : 31 : —	8·0	Id.; id.; cumulo-strati to S. ●
29 0	690	61·6	53·7	7·9	1·1	0·9	28	28 : — : —	6·2	Loose cumuli; cirro-stratous scud. ⊙
1	702	60·9	53·5	7·4	1·3	1·1	28	30 : — : —	7·0	Id.; cirro-strati, cirro-cumuli, cumuli. ⊖
2	681	62·3	54·2	8·1	1·7	1·3	28	29 : — : —	7·0	Id.; cirro-stratous scud. ⊙
3	697	62·4	54·2	8·2	1·7	0·9	29	29 : — : —	7·5	Id.: woolly cirro-strati; cirro-cumuli. ⊖
4	691	64·0	54·8	9·2	1·3	0·6	31	29 : — : —	9·7	Scud, loose cumuli; cirro-strati.
5	692	63·4	55·6	7·8	1·2	0·3	31	30 : — : —	7·0	Loose cumuli; cirro-cumulo-strati. ●
6	691	62·6	54·0	8·6	1·0	0·6	30	30 : — : —	9·8	Scud, loose cumuli; cirro-stratous scud.
7	688	61·7	53·8	7·9	0·5	0·4	30	29 : — : —	8·5	Id.
8	675	59·4	53·0	†6·4	0·4	0·1	31		2·0	Id.: cirro-strati. ⊙
9	668	54·0	51·1	⸸2·9	0·0	0·0	28		2·0	Id.; id. ☽
10	679	53·6	51·9	1·7	0·0	0·0			9·0	Id.
11	677	53·8	51·0	2·8	0·1	0·0			9·0	Id.
12	665	52·8	51·3	1·5	0·0	0·0	20	28 : — : —	8·5	Scud and loose cumuli; cirro-strati. ☽
13	29·645	48·2	47·8	0·4	0·0	0·0	16	— : 28 : —	2·0	Cirro-cumulo-strati to SW.; cirro-strati to E. ☽
14	621	45·6	45·1	0·5	0·0	0·0	17	— : 21 : —	3·0	Cirro-cumuli; curled cirri. ☽
15	598	46·8	46·3	0·5	0·0	0·0		— : 20 : —	6·0	Id.; cirri and cirro-strati.
16	562	45·9	45·7	0·2	0·0	0·0		— : 22 : —	9·5	Cirro-stratous scud; cirro-cumuli; cirri; scud to E.
17	543	47·0	46·6	0·4	0·0	0·0		22 : 23 : —	9·0	Cirro-cumuli; cirro-stratous scud; cirro-strati. ⊖

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29	18	29·515	47·8	47·3	↑0·5	0·0	0·0	1	19 : 22 : —	9·3	Thin scud, loose cumuli; cirro-strati, cirrous haze.
	19	486	49·7	49·0	↓0·7	0·0	0·0	6		10·0	Patches of loose scud; id.; id.
	20	461	51·0	50·0	1·0	0·0	0·0	4	19 : — : —	10·0	Scud; cirro-strati, cirrous haze. [rain since 20^h.
	21	422	51·4	51·0	0·4	0·0	0·0	4	7 : 16 : —	9·9	Thin smoky scud; wavy cir.-str. scud; range of cum.-str.;
	22	383	55·0	53·0	2·0	0·1	0·0	6	16 : — : —	10·0	Scud; cirro-stratous scud.
	23	333	58·0	54·3	3·7	0·2	0·5	13	15 : — : —	10·0	Id.; id.; rain^{1}
30	0	296	57·3	54·7	2·6	0·5	0·3	13	14 : — : —	10·0	Id.; cirro-strati; rain^{1}
	1	262	57·4	54·2	3·2	1·0	0·4	13	14 : — : —	10·0	Id.; id.; cirro-stratous scud.
	2	229	56·3	53·7	2·6	0·7	0·2	13	14 : — : —	10·0	Id.; id.; id.
	3	200	54·9	53·8	1·1	0·9	0·2	13	14 : — : —	10·0	Id.; id.; rain$^{1-2}$
	4	172	54·0	53·5	0·5	0·3	0·2	13	12 : 13 : —	10·0	Id.; id.; rain^{2}
	5	145	53·4	52·9	0·5	0·2	0·1	6	13 : 14 : —	10·0	Id.; cirro-stratous scud; cirro-strati; rain$^{0·2}$
	6	121	55·0	53·7	1·3	0·1	0·1	2	12 : — : —	10·0	Id.
	7	109	55·7	54·3	1·4	0·1	0·1	1	12 : — : —	10·0	Id.; cirro-strati and cumuli to S.
	8	106	55·0	54·0	1·0	0·1	0·0	4	10 : — : —	10·0	Id.; cirro-strati.
	9	105	53·7	53·0	0·7	0·2	0·1	4	4 : 8 : —	10·0	Smoky scud; cir.-str. scud; cirro-strati, cirrous haze.
	10	112	53·7	53·0	0·7	0·0	0·0	6		10·0	Id.; id.; id.
	11	126	54·0	53·6	0·4	0·2	0·1	4		10·0	Scud.
	12	136	54·0	53·7	0·3	0·3	0·3	4		10·0	Id.
	13	29·150	53·6	53·4	0·2	0·4	0·3	5		10·0	Scud; rain$^{0·5}$
	14	169	53·4	53·0	0·4	0·5	0·3	4		10·0	Id.; rain$^{0·7}$
	15	187	53·2	52·6	0·6	0·7	0·7	2		10·0	Id.; id.
	16	207	52·9	52·3	0·6	0·4	0·2	2	3 : — : —	10·0	Id.; id.
	17	226	52·0	51·4	0·6	0·4	0·3	3	3 : — : —	10·0	Thin scud; cirro-stratous scud; cirro-strati; rain$^{0·7}$
	18	244	52·0	51·2	0·8	0·4	0·4	3	3 : — : —	10·0	Id.; id.; rain$^{1·5}$
	19	262	52·4	51·8	0·6	0·3	0·0	4	3 : — : —	10·0	Id.; id.; rain^{1}
	20	281	53·9	52·9	1·0	0·1	0·0	2	2 : — : —	10·0	Id.; id.
	21	292	55·6	53·7	1·9	0·2	0·1	2	0 : — : —	10·0	Scud; dense cirro-strati.
	22	302	57·7	54·0	3·7	0·2	0·0	0	31 : — : —	10·0	Id.; id.
	23	307	57·6	53·5	4·1	0·2	0·2	31	31 : — : —	10·0	Id.; id.
31	0	314	58·0	53·5	4·5	0·3	0·2	28	31 : — : —	10·0	Id.; id.
	1	312	61·2	55·7	5·5	0·2	0·1	30	27 : — : —	10·0	Id.; id.
	2	307	60·0	54·8	5·2	0·3	0·3	20	27 : — : —	10·0	Id.; id.; rain$^{0·2}$
	3	305	59·0	55·5	3·5	0·4	0·2	21	28 : — : —	10·0	Id.; id.
	4	307	58·0	55·3	2·7	0·2	0·1	21	27 : — : —	10·0	Id.; id.; rain$^{0·2}$
	5	302	55·6	55·2	0·4	0·2	0·1	20	29 : — : —	10·0	Id.; id.; rain$^{1·5}$
	6	304	56·8	56·4	0·4	0·0	0·1	12	27 : — : —	10·0	Id.; cirro-strati; cumulo-strati to NW.; rain^{2} ●
	7	302	55·1	54·7	0·4	0·2	0·0	12	25 : — : —	9·9	Loose gray cumulo-strati; woolly cirro-strati; rain$^{0·5}$
	8	305	54·2	53·2	1·0	0·1	0·0	24	26 : 25 : —	9·9	Cir.-cum.-str., cirro-stratous scud; cirro-strati; rain$^{0·2}$
	9	304	53·8	52·7	1·1	0·0	0·0	18	26 : — : —	10·0	Clouds thicker than at 8^h.
	10	304	54·6	52·8	1·8	0·2	0·2	20		10·0	Scud.
	11	303	54·0	51·6	2·4	0·2	0·2	22		10·0	Id.
	12	299	52·9	50·7	2·2	0·6	0·2	21		9·7	Id.
	13	29·288	52·7	50·4	2·3	0·5	0·2	20		9·7	Scud; cirro-stratus.
	14	275	52·0	50·0	2·0	0·6	0·3	22	26 : — : —	9·7	Id.; id.
	15	271	51·1	49·6	1·5	0·4	0·1	20		7·5	Id., loose cumuli, cirro-strati, cirri. ☽
	16	263	51·6	50·1	1·5	0·1	0·1	21	26 : — : —	7·5	Id.; cirri, cirrous haze. ☽
	17	254	51·7	50·1	1·6	0·2	0·1	22	25 : — : —	9·5	Id.; cirro-stratous scud; cirro-strati; cirri.
	18	256	52·0	51·1	0·9	0·2	0·0	22		9·9	Cirro-stratous scud, cirro-strati; rain$^{0·2}$
	19	261	54·9	53·3	1·6	0·1	0·0	22	26 : — : —	10·0	Scud, cirro-stratous scud; sheet of cirro-strati; rain$^{0·2}$
	20	267	55·6	53·9	1·7	0·2	0·3	22	29 : — : —	10·0	Id.; thick sheet of cirro-strati; rain$^{0·2}$ ●
	21	267	57·2	54·2	3·0	0·3	0·2	22		10·0	Id.; id.; id. ●
	22	270	58·0	54·6	3·4	0·3	0·2	23	28 : — : —	10·0	Loose scud; mass of cirro-strati.
	23	273	55·7	54·0	1·7	0·6	0·2	22	28 : — : —	10·0	Scud; cirro-stratus.
1	0	277	57·8	54·3	3·5	0·8	0·4	24	26 : 27 : —	10·0	Loose smoky scud; cirro-stratous scud.
	1	278	60·0	55·0	5·0	0·8	0·6	25	28 : — : —	10·0	Scud; cirro-strati; cirrous haze.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.	
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From				
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.		
1	2	29·281	60·2	55·1	5·1	0·8	0·7	26	26 : — : —	10·0	Scud ; cum.-str. ; cir.-str., cir. haze ; drops of rain.	●
	3	287	61·2	55·2	6·0	0·8	0·7	28	26 : — : —	10·0	Id. ; id. ; id., id.	
	4	299	60·9	55·2	5·7	0·8	0·9	24	26 : — : —	10·0	Id. ; id.	
	5	310	58·2	54·9	3·3	1·0	0·4	23	26 : — : —	10·0	Patches of scud ; thick mass of cirro-strati.	
	6	318	58·9	54·7	4·2	1·7	1·0	22	25 : — : —	9·8	Id. ; id.	
	7	333	57·0	53·0	4·0	1·5	1·2	21	26 : — : —	9·8	Scud ; cirro-stratus.	
	8	347	55·9	52·7	†3·2	0·9	0·8	24	26 : — : —	9·7	Loose scud ; cirro-stratous scud ; cirro-strati.	⊙
	9	365	55·4	51·7	⸸3·7	0·9	0·8	24	25 : 26 : —	9·8	Id. ; id. ; id.	
	10	387	54·7	51·8	2·9	0·7	0·4	24	25 : — : —	9·9	Id. ; id. ; id.	
	11	400	53·2	50·9	2·3	0·8	0·7	21		9·9	Id. ; id. ; id.	
	12	417	53·8	50·3	3·5	0·8	1·1	23		9·9	Scud and cirro-stratus.	
	13	29·426	53·3	50·0	3·3	0·9	1·1	23		10·0	Scud and cirro-stratus.	
	14	439	53·0	50·0	3·0	1·0	0·5	24		9·9	Id.	
	15	450	52·4	49·0	3·4	0·7	0·4	22		9·9	Id.	
	16	456	52·9	49·0	3·9	0·4	0·2	21	26 : — : —	9·5	Id.	
	17	462	51·5	48·5	3·0	0·5	0·4	20	26 : 24 : —	9·0	Id.	
	18	483	50·0	47·5	†2·5	0·6	0·3	21	— : 24 : —	5·0	Cirro-cumuli ; cirro-strati.	●
	19	503	51·0	47·7	3·3	0·4	0·2	22		0·5	Id. ; id. ; cirri.	⊙
	20	508	53·8	49·6	4·2	0·2	0·2	26	23 : — : 12	0·7	Loose scud ; cirri ; cirro-strati.	⊙
	21	518	55·0	50·0	⸸5·0	0·7	0·5	26	24 : — : 10	4·0	Id. ; woolly, linear, and diffuse cirri.	⊙
	22	524	58·9	53·5	5·4	0·4	0·5	24	25 : — : —	7·0	Id. ; id.	⊖
	23	526	60·0	52·9	7·1	0·9	0·2	24	24 : — : —	9·5	Scud ; loose cumuli, cirro-strati, cirri.	
2	0	530	62·2	55·0	7·2	0·5	0·1	24	24 : — : —	10·0	Thick scud and loose cumuli.	
	1	531	61·7	55·7	6·0	0·8	0·5	20	24 : — : —	8·5	Scud ; loose cumuli.	⊖
	2	529	63·7	55·0	8·7	0·9	0·6	24	24 : 22 : —	7·0	Id. ; cumuli ; cirro-strati.	
	3	533	55·7	54·9	0·8	0·8	0·4	22	22 : — : —	9·0	Id. ; id. ; id. ; rain$^{2-4}$	
	4	530	60·7	57·3	3·4	0·4	0·2	24	22 : — : —	9·0	Id. ; id. ; id. ; showers.	⊖
	5	515	64·0	58·7	5·3	0·2	0·4	22	23 : — : —	8·0	Id. ; id. ; id.	⊖
	6	512	60·0	56·0	†4·0	0·9	0·3	19	20 : — : —	6·0	Id. ; id. ; id.	⊖
	7	513	58·4	54·9	3·5	0·4	0·2	20	— : 24 : —	9·0	Id. ; id. ; id.	
	8	518	56·0	53·3	⸸2·7	0·2	0·1	22	— : 24 : —	7·0	Cirro-cumuli ; cirro-strati.	●
	9	520	53·3	51·3	2·0	0·1	0·0	24		1·5	Scud and cirro-strati.	
	10	515	50·8	49·3	1·5	0·1	0·0	24		0·2	Cirro-strati and cirrous haze on E. horizon.	
	11	509	46·7	46·3	0·4	0·0	0·0	20		0·2	Cirri on NE. horizon ; faint lunar corona.	☽
	12	507	46·6	46·2	0·4	0·0	0·0	20		0·2	Patches of cirri ; heavy dew.	☽
	13	29·498	45·3	44·9	0·4	0·0	0·0	18	— : 16 : —	5·0	Woolly cirri and cirro-cumulo-strati.	☽
	14	479	42·7	42·6	0·1	0·0	0·0	18		0·5	Cirri on horizon ; auroral light ; very clear.	☽
	15	464	41·0	41·0	0·0	0·0	0·0	18		0·5	Cirri ; cirro-strati to NE.	☽
	16	447	40·2	39·9	0·3	0·0	0·0	15	16 : — : —	3·0	Fog at $\frac{1}{4}$ mile ; stratus ; lunar corona.	☽
	17	429	40·3	40·0	0·3	0·0	0·0	18		5·0	Fog at 120 yards.	☽
	18	419	41·5	41·1	†0·4	0·0	0·0	20	22 : — : —	1·5	Fog clearing off ; cirro-strati to N. and S.	⦶
	19	392	43·0	42·7	0·3	0·0	0·0			1·0	Fog ; cirro-strati.	⊙
	20	376	48·0	47·5	0·5	0·0	0·0	8	— : — : 20	1·2	Fog at 1 mile ; woolly cirri.	⊙
	21	348	54·0	51·8	⸸2·2	0·3	0·3	7	14 : — : —	2·0	Foggy scud.	⊙
	22	329	57·0	53·3	3·7	0·6	0·6	5	10 : — : —	2·5	Cumuli ; cirri and cirrous haze.	
	23	300	60·4	54·6	5·8	1·1	1·0	8	10 : 12 : —	6·5	Id. ; id.	
3	0	286	60·1	54·0	6·1	1·0	0·9	6	9 : — : —	9·5	Loose cumuli ; cirro-stratous scud.	
	1	269	61·5	55·7	5·8	1·1	0·9	6	8 : — : —	9 9	Id. ; cirro-strati ; cirrous haze.	
	2	255	60·2	54·0	6·2	1·3	0·9	6	8 : — : —	9·5	Id. ; id. ; id.	
	3	240	58·3	53·3	5·0	1·5	0·9	7	7 : — : —	10·0	Id. ; id. ; a few drops of rain.	
	4	225	55·2	53·4	1·8	1·3	0·6	4	6 : — : —	10·0	Scud ; id. ; rain$^{0·5}$	
	5	218	55·0	52·7	2·3	1·6	0·5	4	6 : — : —	10·0	Id. ; id. ; id. [rain$^{0·5}$	●
	6	202	55·7	53·8	1·9	0·9	0·7	4	5 : — : —	9·9	Loose scud ; piles of cum. ; woolly cirri, cirro-strati ;	
	7	204	55·2	52·9	2·3	1·0	1·2	6	6 : — : —	10·0	Id. ; cirro-strati.	
	8	220	53·5	51·8	1·7	0·9	0·2	4	6 : — : —	10·0	Id. ; id.	
	9	224	53·0	51·2	1·8	0·4	0·2	3	4 : — : —	9·8	Scud ; cirro-strati ; woolly cirri ; drops of rain.	

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
3 10	29·232	53·2	51·7	1·5	0·2	0·2	3	4 : — : —	9·8	Scud; cirro-strati; woolly cirri; drops of rain.
11	237	51·8	50·4	1·4	0·2	0·1	4		4·0	Id.; id.
12	246	50·6	49·7	0·9	0·2	0·0	4		4·0	Id.; cirro-cumuli. ☽
23	29·365	...	...	...	0·2	0·0			......	
4 13	29·507	52·0	50·7	1·3	0·6	0·0	24		9·9	Large cirro-cumuli.
14	514	51·0	50·0	1·0	0·0	0·0	0 v.	— : 23 : —	6·5	Id.; cirro-strati to S.; sky to S.
15	522	49·0	48·3	0·7	0·0	0·0	20	— : 23 : —	3·0	Cirro-cumuli; banks of cirro-strati to NE. ☽
16	517	48·0	47·7	0·3	0·0	0·0	24		10·0	Cirro-stratous scud.
17	523	49·5	48·9	0·6	0·0	0·0	20	— : 24 : —	10·0	Id.
18	533	51·0	50·0	1·0	0·0	0·0	24	— : 24 : —	10·0	Thin scud; cirro-stratus.
19	539	53·4	52·2	1·2	0·0	0·0		— : 24 : —	10·0	Cirro-stratous scud; cirro-strati.
20	556	56·1	54·0	2·1	0·0	0·0	20	— : 24 : —	10·0	Id.; id.
21	566	59·2	56·0	3·2	0·1	0·1	20	24 : — : —	9·9	Loose scud; cirro-stratous scud; cirro-strati; cumuli.
22	561	61·3	57·3	4·0	0·1	0·1	20	24 : — : —	9·9	Id.; id.; id.; id.
23	576	64·3	58·1	6·2	0·2	0·0	14	23 : — : —	9·9	Id.; id.; id.; id.
5 0	579	64·7	58·3	6·4	0·2	0·1	18	23 : — : —	10·0	Id.; id.; id.; id.
1	577	67·5	59·6	7·9	0·0	0·0			9·8	Id.; id.; id.; id.
2	568	66·7	59·6	7·1	0·0	0·0	4	21 : — : —	9·8	Scud; cumuli; cirro-strati. ⊖
3	560	67·8	59·8	8·0	0·0	0·0	28		8·0	Id.; id.; id.; patches of cirri.
4	553	66·9	59·2	7·7	0·1	0·0	8	20 : 16 : —	8·0	Id.; id.; id.; id. ⊖
5	548	67·0	59·3	7·7	0·1	0·1	8	— : 16 : —	9·0	Cirro-cumulous scud; cumulo-strati; nimbi; cirri. ⊖
6	538	61·4	57·0	3·8	0·4	0·3	14	— : 17 : —	9·5	Id.; id.; id.; id. ⊖
7	534	61·8	57·4	4·4	0·4	0·1	14	— : 17 : —	8·5	Cirro-cumuli; linear and woolly cirri; cumuli.
8	528	58·6	55·9	†2·7	0·4	0·2	14	14 : 14 : 22	6·0	Scud; cir.-cum.-str.; woolly and linear cirri. ⊙
9	527	55·6	52·3	‡3·3	0·1	0·0	28	— : 16 : —	9·0	Cir.-cum. scud; cir.-cum.-str.; cirro-strati; cirri.
10	517	54·3	52·3	2·0	0·0	0·0	8		8·5	Id.; id.; id.; id.
11	504	53·7	53·2	0·5	0·1	0·0	8		6·5	Scud and cirri.
12	484	53·7	51·9	1·8	0·1	0·2	4		10·0	Thick scud; cirri.
13	29·464	53·7	52·7	1·0	0·3	0·3	4	16 : — : —	10·0	Thick scud; cirri; rain$^{0·2}$; showers.
14	440	54·2	53·3	0·9	0·4	0·3	4		10·0	Id.; id.
15	406	54·1	53·3	0·8	0·3	0·3	3		10·0	Id.; rain$^{0·2}$
16	374	53·6	52·7	0·9	0·4	0·3	5	— : 16 : —	10·0	Cirro-strati; patches of scud.
17	348	53·9	53·0	0·9	0·5	0·3	7	8 : — : —	10·0	Loose scud; nearly uniform cirro-strati; drops of rain.
18	319	54·9	53·6	1·3	0·4	0·4	6	8 : — : —	10·0	Id.; id.; rain$^{0·2}$
19	280	55·0	52·0	3·0	1·5	1·4	6	9 : — : —	10·0	As before.
20	250	53·5	52·2	1·3	2·7	1·7	6	6 : — : —	10·0	Id.; rain$^{0·2}$
21	198	54·0	53·2	0·8	2·4	2·4	6	5 : — : —	10·0	Id.; rain$^{0·5}$
22	149	54·5	53·5	1·0	2·1	2·1	5	3 : — : —	10·0	Id.; id.
23	106	56·5	54·9	1·6	2·1	0·7	5	10 : — : —	10·0	Id.
6 0	072	61·2	59·2	2·0	0·9	0·6	8	11 : 13 : —	9·8	Scud; scud and loose cumuli; woolly cirri. ⊖
1	031	66·0	59·2	6·8	1·3	2·0	16	14 : 15 : —	9·5	Id.; id.; shower^{4} since 0h. ⦶
2	021	63·4	57·5	5·9	1·6	1·5	14	15 : — : —	9·9	Id.; loose cumuli; sky to S.
3	006	63·0	56·0	7·0	2·7	2·6	14	16 : 12 : —	7·0	Id.; id. ⊖
4	29·005	59·0	53·7	5·3	3·5	1·3	14	16 : — : —	9·9	Id.; id.
5	28·982	58·3	53·0	5·3	2·6	1·8	16	16 : — : —	9·9	Id.; id.; a break to E.
6	930	55·0	51·6	3·4	3·5	1·6	14	15 : — : —	9·5	Loose scud, cir.-str. scud; uniform cir.-str.; rain$^{0·5}$
7	868	55·8	51·8	4·0	3·8	2·8	14	15 : — : —	10·0	Id., id.; drops of rain.
8	838	54·7	51·8	2·9	3·3	2·4	13	16 : — : —	9·9	Id.; blue to WSW.
9	811	55·2	52·8	2·4	2·4	2·8	17	17 : — : —	10·0	Scud.
10	824	54·1	51·4	2·7	3·1	2·6	18	19 : — : —	10·0	Id.
11	852	52·4	49·6	2·8	3·3	1·7	19		3·0	Id.
12	864	52·3	50·6	1·7	2·0	0·9	19		9·0	Loose scud; rain$^{0·2}$
13	28·873	53·7	51·9	1·8	1·6	0·5	18	20 : — : —	10·0	Loose scud.
14	880	53·3	51·1	2·2	0·7	0·3	18		10·0	Id.
15	880	52·0	51·1	0·9	0·7	0·2	20		10·0	Id.; rain$^{0·2}$ since 14h.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
6	16	29·880	53·2	52·8	0·4	1·1	1·3	19		10·0	Loose scud; rain1-2
	17	880	53·0	52·7	0·3	1·3	1·3	20	22 : — : —	10·0	Scud; cirro-strati.
	18	889	53·2	52·9	0·3	1·3	0·8	19	22 : — : —	9·9	Id.; id.; rain2
	19	906	54·3	53·3	1·0	1·3	0·5	19	21 : 23 : —	10·0	Smoky scud; cirro-stratous scud; cirro-strati.
	20	914	55·0	53·8	1·2	1·2	1·2	18	21 : 23 : —	10·0	Id.; id.; id.; rain2
	21	928	54·0	53·3	0·7	1·4	0·6	20	21 : — : —	10·0	Scud; rain3
	22	950	57·4	55·4	2·0	1·2	0·6	20	21 : 20 : —	10·0	Thin scud; cirro-stratous scud.
	23	28·970	58·1	55·1	3·0	1·9	1·7	20	20 : 20 : —	9·2	Id.; cirro-cumuli, cumuli, cirro-strati.
7	0	29·011	57·3	53·7	3·6	2·4	2·3	21	22 : 23 : —	10·0	Scud; cirro-strati.
	1	030	58·8	54·8	4·0	3·8	1·8	19	22 : — : —	10·0	Id.; id.
	2	034	58·1	54·3	3·8	3·9	3·2	19	21 : 22 : —	9·2	Loose scud; cir.-str.; woolly cirri; cirrous haze.
	3	057	59·9	55·7	4·2	4·4	2·6	19	21 : 22 : —	9·5	Id.; id.; id.; id.
	4	069	59·1	55·4	3·7	3·6	2·4	20	21 : 22 : —	9·0	Id.; id.; id.; id.
	5	065	58·3	53·8	4·5	3·3	3·2	19	21 : 22 : —	9·5	Id.; id.; id.; id.
	6	068	55·9	51·9	4·0	3·6	2·3	20	21 : 22 : —	9·2	Scud; cirro-strati; cirro-cumuli; cirri.
	7	071	55·4	52·0	3·4	3·1	2·8	18	21 : 22 : —	7·0	Id.; id.; id.; id.
	8	080	53·8	50·9	2·9	2·8	1·5	19	21 : — : —	9·8	Id.; id.; id.; id.
	9	086	52·1	49·8	2·3	1·9	1·7	20	21 : 22 : —	9·8	Id.; id.
	10	097	52·6	49·9	2·7	1·4	0·7	20		10·0	Id.; id.
	11	095	52·5	50·0	2·5	1·1	1·5	19		10·0	Id.; id.
	12	085	52·3	50·0	2·3	1·2	0·8	20		10·0	Id.
	13	29·071	52·2	50·0	2·2	1·2	0·9	20		7·0	Scud; sky in zenith.
	14	066	51·2	49·3	1·9	0·8	0·3	19		8·0	Id.
	15	049	51·5	49·7	1·8	0·7	0·4	18	20 : — : —	9·9	Id.
	16	031	52·0	50·0	2·0	0·6	0·4	20	22 : 22 : —	9·5	Smoky scud; cirro-cumuli; cirro-strati.
	17	026	52·2	50·5	1·7	0·8	0·4	20	22 : — : —	10·0	Scud; cirro-cumuli.
	18	021	52·7	51·3	1·4	0·7	0·4	18	24 : — : —	9·9	Id.; id.
	19	020	53·8	51·9	1·9	0·8	0·7	20	24 : — : —	9·9	Id.; cirro-strati.
	20	019	57·0	53·8	†3·2	1·2	0·4	19	24 : — : 22	9·8	Id.; woolly cirri; cirrous haze; cirro-strati.
	21	035	54·0	53·0	†1·0	1·1	0·3	21	0 : 22 : —	9·9	Id.; uniform sheet of cirro-strati; rain0·7
	22	048	58·1	55·6	2·5	0·6	0·4	21	24 : — : —	9·9	Id.; woolly cirri; cirrous haze; faint solar halo.
	23	066	61·6	55·4	6·2	1·5	1·3	24	24 : 24 : —	9·7	Id.; id.; id.; cirro-cumuli.
8	0	077	59·6	53·9	5·7	2·6	1·0	22	24 : — : —	9·6	Id.; cumuli; cirri.
	1	091	61·0	53·6	7·4	2·7	2·2	24	25 : — : —	8·0	Id.; id.; cirro-strati; cirro-cumuli.
	2	106	59·9	54·0	5·9	3·0	2·5	20	24 : — : —	9·9	Id.; cirro-strati and cirrous haze.
	3	118	59·2	53·3	5·9	2·6	2·1	25	24 : 24 : —	9·8	Id.; cumuli; cirro-strati; cirrous haze.
	4	130	59·1	53·6	5·5	2·6	1·7	23	25 : — : —	9·9	Id.; cirrous haze; cirro-strati; solar halo.
	5	140	59·2	53·7	5·5	2·2	1·2	24	25 : — : —	9·8	Id.; id.; id.
	6	146	58·3	53·0	5·3	1·8	1·1	23	25 : — : —	9·8	Id.; id.; id.
	7	159	58·1	52·7	5·4	1·9	0·9	23	25 : — : —	9·9	Id.; id.; id.; rain0·2
	8	168	56·1	52·1	4·0	1·5	1·7	22	26 : 27 : —	9·0	Id.; cirro-cumuli; id.; woolly cirri.
	9	185	55·0	51·6	3·4	1·6	1·1	22	26 : — : —	7·5	Id.; id.
	10	193	54·3	50·9	3·4	1·7	1·6	23		5·0	Id.; cirro-strati.
	11	210	54·4	51·1	3·3	1·4	0·8	23		5·0	Id.; id.
	12	229	54·1	50·9	3·2	1·4	1·8	25		5·0	Cirro-stratous scud; cirri.
	13	29·243	53·3	50·5	2·8	1·7	1·0	24		4·0	Cirro-stratous scud; cirri.
	14	243	53·3	50·3	3·0	1·4	1·6	25		7·0	Id.; id.
	15	251	53·0	50·0	3·0	2·2	1·1	25	— : 26 : —	7·0	Cirro-cumulo-strati; cirro-strati.
	16	264	52·3	49·4	2·9	2·6	1·9	25	— : 26 : —	3·5	Id.; id.
	17	277	51·1	48·7	2·4	1·1	0·8	25	— : 26 : —	5·5	Id.; grey nimbi to NW.
	18	291	52·1	49·1	3·0	1·0	0·8	24 v.	26 : 28 : 28	7·5	Scud; woolly cirri; cirro-cumulo-strati.
	19	317	53·4	49·8	3·6	1·2	0·8	24	— : 27 : —	8·0	Woolly cirro-strati; scud on horizon.
	20	322	54·7	51·0	3·7	0·7	0·4	24	— : 27 : —	9·0	Id.; id.
	21	344	55·9	51·3	4·6	0·7	0·5	21	26 : 26 : —	7·0	Loose scud; cirro-strati, cirro-cumuli.
	22	353	57·8	52·3	5·5	0·7	0·6	25	26 : — : —	9·0	Id.; id.; id.
	23	366	59·9	53·3	6·6	1·1	0·6	24	25 : — : —	9·5	Id.; id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
9	0	29·375	59·5	52·1	7·4	1·3	1·1	22	24 : — : —	9·5	Scud and loose cumuli; cirro-strati; cirri.
	1	371	60·8	52·5	8·3	1·5	0·7	24	28 : 24 : —	8·5	Loose scud; loose cumuli. ⦶
	2	374	60·3	53·0	7·3	2·0	1·2	22	25 : — : —	9·5	Scud and loose cumuli; cirro-strati; cirri.
	3	385	59·0	52·0	7·0	1·3	0·7	24	26 : — : —	9·5	Id.; id.; id.
	4	393	57·5	52·2	5·3	1·7	0·8	23	26 : — : —	10·0	Id.
	5	399	55·8	50·6	5·2	0·5	0·3	23	24 : — : —	10·0	Id.
	6	395	56·4	51·2	5·2	0·6	0·3	23	26 : — : —	9·5	Scud; cirro-stratous scud; id.; id.
	7	395	55·1	49·7	5·4	1·1	0·3	24	26 : — : —	8·0	Id.; id.; id.; id.
	8	404	53·5	48·3	5·2	0·5	0·4	24	— : 24 : —	9·0	Cirro-cumulo-strati; woolly cirro-strati and cirri.
	9	410	51·9	48·0	3·9	0·3	0·3	23	— : 25 : —	9·0	Id.; id.
	10	411	50·4	47·6	2·8	0·4	0·3	22		9·0	Id.
	11	404	49·5	46·9	2·6	0·2	0·1	22		3·0	Scud.
	12	408	47·5	45·8	1·7	0·1	0·1	22		3·0	Id.; cirro-strati.
	13	29·405	47·2	45·6	1·6	0·2	0·1	21		3·0	Scud; cirro-strati.
	14	397	45·3	44·3	1·0	0·2	0·2	20		1·0	Thin clouds.
	15	396	44·2	43·1	1·1	0·2	0·1			1·0	Id.; cirro-strati on horizon. ☽
	16	384	42·0	41·3	0·7	0·1	0·0	24		0·3	Cirro-strati on horizon; very clear. ☽
	17	381	41·4	40·6	0·8	0·2	0·1	20	— : 0 : —	2·2	Loose cirro-cumulous scud; cirro-strati, cirri.)
	18	388	43·2	41·5	†1·7	0·2	0·2	20	0 : 28 : —	2·0	Scud; woolly and mottled cirri. ⦶
	19	392	45·7	43·6	2·1	0·1	0·0	20	— : 31 : —	8·0	Cirro-stratous scud; cirro-strati; cirri; cirrous haze.
	20	396	49·7	46·0	↓3·7	0·1	0·0	22	— : 30 : —	9·5	Id.
	21	395	54·3	50·0	4·3	0·1	0·0	28	28 : — : —	9·3	Scud and loose cum.; cir.-str., woolly and lin. cirri. ●
	22	400	55·5	49·1	6·4	0·4	0·3	0	31 : — : —	9·8	As before.
	23	399	58·4	51·7	6·7	0·2	0·1	31	31 : — : —	9·8	Scud and loose cumuli; cumulo-strati to E.
10	0	408	58·9	51·9	7·0	0·2	0·1	28	31 : — : —	9·5	Ranges of flat-based cumuli; cirro-cumulo-strati. ●
	1	413	61·0	53·5	7·5	0·3	0·1	28	31 : — : —	9·5	As before.
	2	413	60·2	53·0	7·2	0·1	0·1	28	30 : 0 : —	9·8	Loose scud; thicker scud; cumuli; cirro-strati.
	3	417	61·1	53·7	7·4	0·2	0·1	28	30 : — : —	9·2	Scud; cumulo-strati; nimbi, cirro-cumulo-strati.
	4	416	60·3	53·1	7·2	0·2	0·1	30	— : 30 : —	9·0	Cirro-cumulo-strati; cumuli, nimbi, scud; rain to E.
	5	417	60·5	53·0	7·5	0·2	0·1	30	— : 30 : —	6·0	As before. ⊙
	6	417	60·0	53·2	†6·8	0·1	0·0	9	— : 30 : —	4·5	Cirro-cumulo-strati; cumulo-strati; nimbi; scud. ⊙
	7	430	57·4	51·7	↓5·7	0·1	0·0	10	— : 30 : —	4·0	Cirro-cumulous scud; cumuli, cumulo-strati; cir.-str.
	8	446	56·4	52·8	3·6	0·1	0·0	28	29 : — : —	8·0	Scud; cumulo-strati; cirro-strati.
	9	460	53·3	51·4	1·9	0·0	0·0	28	30 : — : —	4·0	Id.; cirro-strati.
	10	474	49·9	48·7	1·2	0·0	0·0			8·0	Id.; id.
	11	494	50·0	48·8	1·2	0·0	0·0			9·8	Id.; id.
	12	488	50·2	48·8	1·4	0·0	0·0			9·5	Id.; id.
	23	29·475	...	...	...	0·5	...	18		......	Sunday—A.M. Cumuli, cum.-str., cir.-str., occasional sunshine. P.M. Overcast; light rain began at $6\frac{1}{2}^h$.
11	13	29·347	53·2	52·4	0·8	1·0	0·0			10·0	Patches of scud; cir.-str.; very dark; drops of rain.
	14	333	52·8	52·2	0·6	0·1	0·1	29		10·0	Scud; cirro-strati; rain$^{0·5}$
	15	320	52·7	52·0	0·7	0·1	0·1	29		10·0	Id.; id.; rain$^{1·5}$
	16	309	52·5	51·9	0·6	0·1	0·2	4	9 : — : —	10·0	Id.; id.; rain$^{0·7}$
	17	297	52·6	52·0	0·6	0·2	0·2	4	4 : 9 : —	10·0	Thin smoky scud; cir.-str. scud; uniform cirro-strati.
	18	301	53·0	52·4	0·6	0·3	0·2	6	5 : — : —	10·0	Smoky scud or stratus; cirrous clouds.
	19	315	54·5	53·8	0·7	0·3	0·2	3	7 : 7 : —	10·0	Thin smoky scud; cirro-cumulo-strati; hazy.
	20	317	56·1	54·9	1·2	0·4	0·3	3	7 : 7 : —	9·9	Id.; id.; id.
	21	328	58·1	56·0	2·1	0·4	0·3	6	6 : — : —	9·9	Scud and loose cumuli; cirro-cumulo-strati; cir.-str.
	22	341	60·0	55·2	4·8	0·5	0·4	4	6 : — : —	9·9	Id.; id.; id.
	23	341	59·8	55·2	4·6	0·6	0·5	3	7 : 6 : —	9·9	Thin scud; loose cumuli; woolly and linear cirri.
12	0	353	63·0	57·0	6·0	0·9	0·7	5	5 : 5 : —	9·5	Id.; scud and loose cumuli; woolly cirri. ⊖
	1	362	62·5	56·3	6·2	0·8	0·3	4	5 : 5 : —	9·2	Id.; id.; id. ●
	2	371	61·7	55·6	6·1	0·7	0·5	5	4 : — : —	8·0	Scud and loose cumuli; woolly cirri to S. ⊙
	3	378	61·3	54·6	6·7	0·7	0·4	4	4 : — : —	7·0	Id.; id. ⦶
	4	383	61·3	55·0	6·3	0·6	0·4	6	4 : — : —	6·0	Loose cumuli; piles of cumuli on horizon. ⊙
	5	386	60·7	55·2	5·5	0·7	0·7	6	4 : — : —	3·0	Id.; id. ⊖

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0-10.	
12	6	29·390	59·3	53·9	†5·4	0·4	0·4	5	5 : — : —	3·8	Cumuli ; patches of cirro-cumulo-strati.
	7	400	58·3	54·0	4·3	0·3	0·3	4	2 : — : 30	6·0	Id., cumulo-strati ; cirri.
	8	411	54·4	51·9	⸸2·5	0·3	0·2	4	2 : — : —	1·2	Id., id. ; id.
	9	416	50·9	49·9	1·0	0·1	0·1	2		0·5	Id., id. ; id. ; cirro-strati.
	10	426	48·3	47·6	0·7	0·0	0·0	16	— : 12 : —	6·5	Cirro-strati.
	11	436	51·0	49·7	1·3	0·0	0·0			9·7	Scud ; cirro-strati.
	12	417	49·7	48·6	1·1	0·0	0·0			7·0	Thin clouds.
	13	29·416	48·7	47·7	1·0	0·0	0·0			9·2	Thin clouds.
	14	403	48·3	47·4	0·9	0·1	0·0			9·5	Id.
	15	393	48·6	47·8	0·8	0·0	0·0	22		9·8	Id.
	16	384	47·6	46·7	0·9	0·0	0·0	22		9·8	Scud ; cumuli on NE. horizon.
	17	373	47·4	46·7	0·7	0·0	0·0	24	6 : — : —	10·0	Id. ; cirro-strati.
	18	363	47·5	46·7	0·8	0·0	0·0	28	7 : — : —	10·0	Id. ; id.
	19	360	48·4	47·4	1·0	0·0	0·0	24	— : 20 : —	9·9	Cirro-cumulo-strati ; uniform cirro-strati ; sky to W.
	20	360	50·8	49·3	1·5	0·0	0·0	25	— : 21 : —	9·8	Id. ; id. ; stratus to E.
	21	353	55·5	53·1	2·4	0·1	0·0	18		9·8	Id. ; loose cum. to N. and S. ; woolly cirri.
	22	339	57·3	53·6	3·7	0·0	0·0	2		9·9	Ragged cumuli and loose scud ; cirrous clouds.
	23	327	60·3	55·6	4·7	0·0	0·0	26		10·0	Cirro-cumulous scud ; cirro-strati ; patches of scud.
13	0	326	60·4	56·0	4·4	0·1	0·1	20	— : 20 : —	9·5	Cir.-cum.-str. ; cumuli and cum.-str.
	1	310	63·8	59·0	4·8	0·1	0·1	18	— : 19 : —	7·5	Id. ; id. ; wooly cirri.
	2	295	65·9	60·7	5·2	0·2	0·1	14	19 : — : —	9·5	Scud ; cumuli ; cum.-str. ; cir.-cum.-str. ; electric.
	3	282	59·2	58·0	1·2	0·2	0·1	11	20 : — : —	9·5	As before ; shower$^{1-4}$
	4	262	61·4	58·0	3·4	0·1	0·2	21	20 : — : —	10·0	Scud ; cumulo-strati ; cirro-strati ; nimbi.
	5	257	59·2	56·0	3·2	0·2	0·2	22	20 : — : —	10·0	As before ; rain$^{0\cdot2}$; raining heavily to SW.
	6	255	55·1	53·8	1·3	0·2	0·0	28	20 : — : —	10·0	Scud ; cirro-stratous scud ; cir.-str. ; rain$^{1-2}$ since 5h.
	7	247	58·0	55·3	2·7	0·0	0·0	22	20 : — : —	9·9	Id. ; id. ; id.
	8	243	55·3	54·2	1·1	0·2	0·0	20	18 : 20 : —	10·0	Id. ; id. ; id.
	9	233	54·6	53·9	0·7	0·0	0·0	20	20 : — : —	10·0	Id. ; id. ; id. ; rain^{1}
	10	222	54·2	53·6	0·6	0·0	0·0			10·0	Id. ; id. ; id. ; rain$^{0\cdot5}$
	11	203	54·1	53·7	0·4	0·0	0·0			10·0	Id. ; id. ; id. ; rain$^{0\cdot5}$
	12	188	53·8	53·3	0·5	0·0	0·0			7·5	Id. ; sky in zenith.
	13	29·174	53·4	53·3	0·1	0·0	0·0			10·0	Scud.
	14	155	52·9	52·5	0·4	0·0	0·0			10·0	Id.
	15	140	51·9	51·3	0·6	0·0	0·0	20		8·0	Id. ; sky in zenith.
	16	119	49·5	48·7	0·8	0·1	0·0	20	— : 17 : —	9·0	Cirro-cumulo-strati ; cirro-strati.
	17	101	47·5	47·0	0·5	0·0	0·0	23	— : 20 : —	7·0	Id. ; id.
	18	089	48·6	48·0	†0·6	0·1	0·0	22	23 : — : —	9·7	Smoky scud ; cir.-cum. ; cirro-strati ; cumuli to NE.
	19	076	50·0	49·3	0·7	0·0	0·0	25	— : 26 : —	9·7	Cir.-str. scud ; cirro-cumuli ; cumulo-strati to NE.
	20	065	53·5	52·0	⸸1·5	0·0	0·0	1	21 : 24 : —	9·5	Loose scud ; cirro-cumuli ; cirro-strati.
	21	061	58·3	56·2	2·1	0·1	0·0	14	24 : 26 : —	9·5	Id. ; cirro-cumulo-strati ; rain$^{0\cdot5}$
	22	064	57·8	54·3	3·5	0·0	0·0	15	24 : 28 : —	7·0	Scud, loose cumuli ; cir.-cum.-str.
	23	060	61·6	56·1	5·5	0·0	0·0	0	28 : 28 : —	9·9	Id., id. ; cirro-strati, moving slowly.
14	0	063	61·4	56·2	5·2	0·1	0·1	26	1 : 28 : —	9·0	Id., cumuli ; cirro-cumulo-strati ; drops of rain.
	1	068	61·2	54·3	6·9	0·1	0·0	2	1 : — : —	9·7	Id., id. ; cirro-strati.
	2	078	59·8	54·8	5·0	0·0	0·0	23	3 : 28 : —	7·0	Id., id. ; cum.-str. ; woolly cir.-str., nimbi.
	3	086	65·3	58·3	7·0	0·1	0·0	16	3 : 28 : —	9 0	Id., id. ; cirro-strati.
	4	090	63·9	57·7	6·2	0·2	0·1	25	2 : 30 : —	5·0	Id., id. ; id. ; cirri ; nimbi to SE.
	5	109	61·7	55·0	6·7	0·5	0·7	31	28 : 30 : —	6·5	Id. ; cumulo-strati ; cirri ; cirro-strati.
	6	132	59·7	53·5	†6·2	0·7	1·0	31	29 : — : —	7·5	As before ; range of cumuli on horizon.
	7	162	56·6	53·0	3·6	0·7	0·5	31	29 : 31 : —	9·5	Loose scud ; cirro-stratous scud ; nimbi ; woolly cirri.
	8	184	55·0	52·7	2·3	0·8	0·3	31	30 : 0 : —	9·0	Id. ; cirro-cumuli ; cirro-strati, cirri.
	9	208	53·5	51·5	⸸2·0	0·2	0·1	0		3·0	Cirro-cumuli ; cirro-strati ; cirri.
	10	232	53·3	51·5	1·8	0·2	0·1	0		9·3	Scud ; id.
	11	236	53·8	51·6	2·2	0·3	0·2	29		9·5	Id. ; id.
	12	240	54·5	51·8	2·7	0·3	0·6	30		10·0	Scud and cirrous clouds ; very dark.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
14	13	29·251	54·6	52·3	2·3	0·3	0·4	29		10·0	Scud and cirrous clouds; very dark.
	14	260	53·5	52·5	1·0	0·7	0·4	29		10·0	Id.; id.; rain^{1}
	15	272	53·6	52·2	1·4	0·5	0·4	29		10·0	As before; rain till a few minutes ago.
	16	280	54·1	51·9	2·2	0·7	0·6	29	0 : — : —	10·0	Scud, &c.; rain^{1}
	17	291	54·0	51·9	2·1	0·6	0·7	30	0 : 31 : —	10·0	Thin scud; thicker scud; cirro-strati; rain^{1}
	18	306	53·7	52·0	1·7	0·8	0·5	30	0 : — : —	10·0	Id.; uniform cirro-strati; rain^{1}
	19	335	54·2	52·5	1·7	1·0	0·6	30	0 : — : —	10·0	Id.; id.; rain$^{0·2}$
	20	357	52·6	52·0	0·6	1·2	0·7	31	0 : — : —	10·0	Id.; rain$^{2-3}$
	21	371	53·7	52·7	1·0	0·9	1·1	0	0 : — : —	10·0	Id.; dense cirro-stratus.
	22	383	55·9	52·9	3·0	1·7	1·7	0	31 : — : —	10·0	Id.; id.
	23	410	53·5	52·7	0·8	1·9	1·0	31	30 : — : —	10·0	Id.; rain^{1}
15	0	434	54·4	53·0	1·4	1·1	1·0	0	31 : — : —	10·0	Scud; dense cirro-strati; loose scud on hor.; rain$^{0·5}$
	1	450	55·7	53·2	2·5	0·8	0·6	0	31 : — : —	10·0	As before; thick wavy cirro-strati to NW.
	2	470	56·8	53·4	3·4	1·0	0·6	31	31 : — : —	10·0	Id.; cirro-strati.
	3	480	57·6	54·0	3·6	0·5	0·2	31	— : 30 : —	10·0	Cirro-stratous scud. [to N.
	4	493	58·6	54·3	4·3	0·2	0·1	1	— : 31 : —	9·9	Id.; cir.-str, cirri; patches of scud; sky
	5	502	60·8	56·5	4·3	0·1	0·1	1	— : 31 : —	9·9	As before; rainbow.
	6	509	60·2	55·7	4·5	0·1	0·0	12	31 : 29 : —	9·0	Loose scud; cirro-stratous scud; cirro-cumulo-strati.
	7	536	58·7	55·7	3·0	0·0	0·2	30	29 : 29 : —	9·5	As before; cirro-strati; rain$^{0·2}$
	8	545	56·8	54·9	1·9	0·1	0·1	28	29 : — : —	9·9	Id.; sky greenish; rain to NW.
	9	556	55·9	54·4	1·5	0·1	0·0	22	29 : 29 : —	10·0	Scud and cirro-strati.
	10	565	55·5	54·0	1·5	0·0	0·0	20		10·0	Id.
	11	567	54·7	53·7	1·0	0·1	0·0			9·0	Id.; black to E.
	12	582	52·4	51·2	1·2	0·1	0·1	22		8·0	Id.
	13	29·582	50·1	49·3	0·8	0·1	0·0			2·0	Scud and cirro-strati.
	14	586	49·3	48·7	0·6	0·1	0·0			9·7	Thin clouds.
	15	585	50·1	49·4	0·7	0·0	0·0			9·9	Scud.
	16	589	50·7	49·7	1·0	0·1	0·0	22		10·0	Id.
	17	591	50·7	49·7	1·0	0·0	0·0	23	22 : — : —	10·0	Id.; cirro-stratous scud.
	18	608	50·7	49·9	0·8	0·0	0·0	18	20 : — : —	10·0	Id.; id.
	19	617	53·0	51·5	1·5	0·1	0·1	20	24 : 21 : —	9·9	Id.; cirro-cumulo-strati. ●
	20	618	55·2	52·7	2·5	0·1	0·1	22	— : 22 : —	9·5	Cirro-cumulo-strati; cir.-cum.; cirro-cumulous scud.
	21	619	58·3	55·2	3·1	0·2	0·1	20	— : 22 : —	7·0	Cirro-strati; cirro-cumuli; cumuli. ⦶
	22	621	59·1	55·0	4·1	0·2	0·2	20	22 : 25 : —	5·0	Scud and loose cumuli; woolly cirri; cirro-strati. ⦶
	23	612	60·7	56·6	4·1	0·2	0·2	20	16 : 18 : 28	6·5	Thin scud; loose cumuli; id.; id. ⊙
16	0	606	65·4	58·1	7·3	0·4	0·2	18	22 : 18 : 28	5·0	Scud; cumuli; varieties of cirri; cirrous haze. ⊙
	1	601	64·8	57·0	7·8	0·3	0·7	19	18 : 24 : —	7·0	As before. ⊙
	2	599	63·7	56·3	7·4	0·7	0·5	19	17 : — : 24	6·0	Cumuli; varieties of cirri; cir. haze; cir.-cum.-str. ⦶
	3	592	60·2	54·2	6·0	0·7	0·8	19	20 : 26 : —	9·0	Scud; cumulo-strati; cirro-strati; id. ●
	4	581	60·5	54·4	6·1	0·9	0·4	20	— : 22 : —	9·3	Wavy cirro-strati; cumulo-strati; id.
	5	570	58·5	53·2	5·3	0·4	0·5	21	— : 20 : —	9·8	Thick wavy cir.-str.; patches of scud; sky to NE.
	6	568	53·0	51·4	1·6	0·6	0·4	22	— : 20 : —	10·0	Scud; thick cirro-strati; rain$^{0·2}$
	7	544	52·8	51·9	0·9	0·4	0·1	20		10·0	Id.; id.; rain$^{0·5}$
	8	509	52·0	50·9	1·1	0·0	0·0	14	18 : 18 : —	10·0	Thick scud and dense cirro-strati.
	9	489	51·0	50·6	0·4	0·2	0·1	16		10·0	Id.; rain$^{0·5}$
	10	453	49·8	49·5	0·3	0·2	0·1	14		10·0	Id.; id.
	11	421	50·7	49·3	1·4	0·1	0·0			10·0	Id.; id.
	12	381	50·0	49·6	0·4	0·0	0·0			10·0	Very dark; rain$^{0·2}$
	13	29·340	50·2	50·0	0·2	0·0	0·0			10·0	Verk dark; rain$^{0·2}$
	14	310	51·2	50·8	0·4	0·1	0·0			10·0	Id.; id.
	15	281	51·2	50·1	1·1	0·0	0·0			10·0	Id.; id.
	16	272	51·9	51·3	0·6	0·0	0·0			10·0	Rain^{1}
	17	274	51·7	51·2	0·5	0·1	0·1	27	27 : — : —	10·0	Scud; cirro-strati.
	18	293	51·3	50·9	0·4	0·6	0·4	28	27 : — : —	10·0	Id.; id.
	19	302	53·0	51·7	1·3	0·5	0·5	28	29 : — : —	10·0	Id.; id.
	20	327	52·7	51·1	1·6	0·7	0·5	28	28 : — : —	9·9	Id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
16 21	29·345	52·6	50·1	2·5	1·0	0·3	28	28 : — : —	10·0	Dense scud; cirro-strati.
22	361	53·4	51·4	2·0	0·2	0·4	28	28 : — : —	10·0	Scud; dense cirro-strati.
23	378	53·4	50·4	3·0	0·6	0·6	30	28 : — : —	10·0	Thick scud; drops of rain.
17 0	399	53·5	50·5	3·0	1·1	0·6	28		10·0	Scud; dense cirro-strati and cirrous haze.
1	415	52·9	49·6	3·3	1·5	1·3	27	28 : — : —	10·0	Id.; id.
2	432	53·0	49·7	3·3	1·2	0·7	28		10·0	Id.; id.; rain$^{0·5}$
3	452	51·3	50·0	1·3	1·1	0·7	28	28 : — : —	10·0	Id.; id.; rain$^{0·2}$
4	464	55·0	51·5	3·5	1·7	0·9	27	28 : — : —	10·0	Id.; id.
5	485	58·6	53·8	4·8	1·4	1·0	28	28 : — : —	9·9	Id.; cirro-strati; breaking to W. ⊙
6	511	57·7	52·9	4·8	1·4	0·5	29	28 : 26 : —	9·0	Two currents of scud; sky to W. ●
7	529	56·6	52·2	†4·4	0·9	0·5	31	28 : 30 : —	7·5	Scud; cir.-cum.; cumuli, nimbi; cumulo-strati. ◑
8	554	53·5	51·0	↓2·5	0·3	0·2	23	28 : — : —	7·0	Id.; cirri, cirro-strati; electric-looking.
9	575	52·2	49·8	2·4	0·4	0·2	24	— : 29 : —	5·0	Cirro-cumuli; cirro-strati; loose scud.
10	596	50·9	48·7	2·2	0·2	0·4	22		3·0	Cirro-strati; scud.
11	623	50·6	48·4	2·2	1·0	0·3	26	28 : — : —	8·0	Scud covering the sky rapidly; showers$^{0·5-1·5}$
12	630	49·2	47·8	1·4	0·2	0·2	26	27 : — : —	1·0	Scud, cirro-strati, clear.
23	29·809	...	...	...	1·5	1·0	30		......	Sunday—Few clouds, cumuli and scud.
18 4½	......	62·5	51·0	11·5	...	...	...		......	
13	29·914	46·2	45·0	1·2	3·3	0·0	24		0·1	Patches of thin clouds, clear.
14	911	44·8	44·6	0·2	0·1	0·1	20		0·0	Clear.
15	903	46·7	45·3	1·4	0·3	0·4	26		0·0	Id.
16	891	46·7	45·3	1·4	0·4	0·1	23		0·3	Cirro-strati on horizon to E. and N.
17	889	45·6	44·5	1·1	0·3	0·1	24		0·3	Cirro-strati and cirri on S., E., and N. horizon.
18	889	45·8	44·3	†1·5	0·2	0·1	20		0·5	Cirri, cir.-str.; mass of scud to N., strati on Cheviot. ⊙
19	888	47·8	46·2	1·6	0·1	0·1	18	28 : — : —	0·8	Pat. of scud to N., cir.-cum.-str. to W., and as at 18h. ⊙
20	877	52·0	49·0	3·0	0·5	0·5	22	27 : — : —	1·8	Scud, cir.-cum.-str., cir.-str., woolly, mottled, &c. cir. ⊙
21	862	55·4	50·4	5·0	0·6	0·7	29	26 : 29 : —	3·0	Scud, loose cumuli; cirro-cumuli; cirro-strati.
22	842	58·0	54·0	↓4·0	0·6	0·7	26	26 : 29 : —	4·5	Id.
23	831	59·2	55·4	3·8	0·9	0·8	28	26 : 29 : —	9·0	Loose scud; cir. scud; fine cir.-str. like large hills.
19 0	821	58·2	52·9	5·3	1·3	1·0	28	26 : — : —	9·8	Scud; chiefly homogen. and wavy cirrous mass; rain$^{0·5}$
1	812	55·0	53·7	1·3	0·5	0·3	24	26 : — : —	10·0	Id.; id.; rain$^{1·0}$
2	798	55·4	53·3	2·1	0·3	0·2	22	25 : — : —	10·0	Much scud; homogeneous cirrous mass.
3	770	57·6	54·9	2·7	0·2	0·1	22	23 : — : —	10·0	Id.; id.
4	750	58·9	55·6	3·3	0·3	0·3	22	23 : — : —	10·0	Id.; id.
5	735	58·8	56·0	2·8	0·5	0·3	21	24 : — : —	9·9	Id.; id.; greenish sky to NE.
6	714	58·1	55·1	3·0	0·3	0·1	21	25 : — : —	9·9	Id.; id.; id.
7	699	58·1	56·1	2·0	0·2	0·0	20	24 : — : —	9·9	Id.; cirro-strati; sky to NW.
8	679	57·9	56·0	1·9	0·1	0·0	18	24 : — : —	10·0	Id.; id.
9	662	58·3	56·8	1·5	0·1	0·1	23	24 : — : —	9·9	Id.; id.; clouds broken.
10	643	58·7	57·3	1·4	0·2	0·0	20		10·0	Scud, dark.
11	623	59·7	57·3	2·4	0·7	0·7	23		2·5	Id., clouds round horizon.
12	602	59·2	56·9	2·3	1·2	1·7	23		10·0	Id. and cirrous haze.
13	29·586	59·0	56·7	2·3	1·2	0·5	20		9·0	Scud and cirrous haze; clouds broken.
14	576	58·9	56·2	2·7	1·2	0·7	23		10·0	Id.
15	562	57·9	55·2	2·7	0·7	0·3	23		7·0	Id.; clouds broken; stars dim.
16	547	55·5	52·2	3·3	0·4	0·3	26	— : 25 : —	8·5	Cirro-cumuli; scud and cirro-strati; cirri to N.
17	528	55·9	52·5	3·4	0·7	0·7	25	25 : — : 24	3·5	Scud; woolly cirri; cirro-strati; bank of scud to S.
18	520	55·3	51·9	†3·4	1·6	0·8	22	26 : — : 25	2·5	Id.; id.; id.; id. ◑
19	523	55·5	51·1	4·4	1·2	0·4	22	25 : 25 : 25	7·0	Patches of loose scud; cir.-cum. and woolly cirri. ◑
20	509	55·0	50·7	4·3	1·0	1·4	23	26 : 25 : 25	3·5	Scud; id. ⊙
21	510	56·9	51·4	↓5·5	2·2	1·4	23	26 : — : —	4·0	Id.; cirro-strati, parallel cirri. ⊙
22	508	57·3	51·2	6·1	1·6	2·3	22		1·0	Masses of loose cumuli and cirro-strati on horizon. ⊙
23	498	57·6	50·9	6·7	1·8	2·0	25	26 : — : —	2·5	Scud and loose cumuli. ⊙
20 0	491	59·0	51·5	7·5	2·0	1·3	24	26 : — : —	6·5	Id. ⊖
1	474	60·2	51·6	8·6	3·0	1·4	25	26 : — : —	4·0	Id. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Aug. 18d 20h. The cirri project long black shadows on the rather milky sky.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
20	2	29·462	61·6	53·1	8·5	2·8	1·9	26	26 : — : —	8·5	Scud and loose cumuli. ⦶
	3	458	61·2	53·8	7·4	2·2	1·2	27	26 : — : —	9·7	Id.
	4	452	60·0	52·8	7·2	2·1	2·0	25	26 : — : —	9·9	Scud, cirro-cumulous scud; rain to NE.
	5	443	60·3	53·7	6·6	2·9	1·1	26	28 : — : —	6·5	Id., loose cumuli; id. ⊙
	6	450	58·7	52·9	5·8	1·6	0·5	30		9·9	Id., cirro-stratous scud; shower$^{3-4}$; rainbow.
	7	476	53·0	52·0	†1·0	2·0	0·1	26	26 : 29 : —	7·0	Id., loose cumuli; cirro-stratous scud, cirro-strati.
	8	476	51·8	48·8	‡3·0	0·4	0·2	28	27 : — : —	7·0	Id., cirro-cumulous scud, cirro-cumuli.
	9	486	51·9	48·3	3·6	0·4	0·2	30		9·9	Id., cirro-stratous scud.
	10	493	51·0	47·8	3·2	0·3	0·2	29		5·0	Id.
	11	494	49·9	47·0	2·9	0·2	0·2	28		9·5	Id.
	12	496	49·8	47·0	2·8	0·4	0·1	27		8·5	Id., cirro-stratous scud.
	13	29·478	49·3	46·6	2·7	0·4	0·2	25		9·2	Scud, cirro-stratous scud.
	14	474	48·0	46·1	1·9	0·2	0·1	22		9·8	Id.
	15	465	48·7	46·6	2·1	0·2	0·2	21		9·9	Id.
	16	455	48·8	46·4	2·4	0·3	0·2	21		8·0	Cirro-stratous scud, cirri.
	17	435	48·6	46·3	2·3	0·3	0·2	22	— : 30 : —	9·5	Cirro-cumulo-strati; scud on horizon.
	18	429	49·9	47·1	2·8	0·4	0·4	22	— : 30 : —	9·9	Cir.-cum.-str. to S.; thick and wavy cir.-str.; scud to S.
	19	422	50·8	47·6	3·2	0·5	0·5	26	28 : — : —	10·0	Loose scud, dense cirro-strati.
	20	425	52·4	48·9	3·5	0·6	0·5	25	28 : — : —	10·0	Id., id.
	21	433	53·0	49·5	3·5	0·5	0·5	23	28 : — : —	10·0	Id., id.; rain$^{0·2}$
	22	429	54·2	51·2	3·0	0·6	0·4	23	28 : — : —	10·0	Id., id.
	23	421	55·0	51·3	3·7	0·4	0·3	20	28 : — : —	9·9	Id., cirri and cirro-strati.
21	0	426	56·3	52·3	4·0	0·6	0·6	25	27 : — : —	10·0	Id., id.
	1	415	57·2	51·3	5·9	0·7	1·2	28	28 : — : —	10·0	Id., cirro-strati.
	2	412	59·0	53·5	5·5	0·6	0·6	28	28 : 0 : —	10·0	Id., thick cirro-strati.
	3	412	59·4	53·0	6·4	0·7	0·5	28	29 : 28 : —	9·9	Id., id.
	4	406	60·5	54·0	6·5	0·9	0·7	28	27 : 31 : —	9·8	Id., cirro-cumulous scud, cirro-strati.
	5	414	58·0	52·2	5·8	0·7	0·4	30	28 : — : —	10·0	Id., cirro-strati.
	6	414	56·6	51·0	5·6	0·6	0·4	30	— : 28 : —	9·9	Cirro-stratous scud, thick and wavy cirro-strati.
	7	420	55·4	50·3	5·1	0·7	0·3	30	— : 28 : —	10·0	Id., id.
	8	419	54·6	50·0	4·6	0·7	0·4	30	— : 28 : —	9·5	Id., cir.-cum.-str.; scud on Cheviot.
	9	435	53·2	49·8	3·4	0·5	0·2	30	— : 28 : —	9·5	Id., id.; id.
	10	443	52·6	49·3	3·3	0·2	0·0	29		9·8	Id., cirro-strati, cirrous haze.
	11	445	51·8	49·2	2·6	0·1	0·1			10·0	Id.
	12	443	50·9	49·0	1·9	0·0	0·1			10·0	Id.
	13	29·442	51·3	49·1	2·2	0·0	0·0			10·0	Cirro-stratous scud.
	14	433	50·6	49·2	1·4	0·0	0·0			10·0	Id.
	15	434	50·2	48·9	1·3	0·0	0·0			10·0	Id.
	16	419	50·0	49·0	1·0	0·0	0·0			10·0	Id.
	17	419	49·8	48·9	0·9	0·0	0·0			10·0	Scud and cirrous clouds; rain$^{0·5}$
	18	411	49·8	49·1	0·7	0·0	0·0			10·0	Id.; id.
	19	407	51·4	50·3	1·1	0·0	0·0	22	26 : — : —	10·0	Scud; dense homogeneous cirro-strati; rain$^{0·5}$
	20	410	52·5	51·4	1·1	0·0	0·0	24	24 : 27 : —	10·0	Loose dripping scud; cirrous mass; rain$^{0·2}$
	21	410	51·8	51·0	0·8	0·1	0·1	22	22 : — : —	10·0	Id.; id.; id.
	22	404	54·0	52·4	1·6	0·0	0·0	24	22 : — : —	10·0	Id.; id.
	23	401	54·8	53·0	1·8	0·1	0·0	17		10·0	Id.; id.; rain$^{0·5}$
22	0	393	54·2	52·2	2·0	0·1	0·0	28	20 : — : —	10·0	Id.; id.
	1	390	54·4	52·2	2·2	0·0	0·0	30		10·0	Id., nearly homogeneous; rain$^{0·5}$
	2	380	55·2	52·9	2·3	0·1	0·1	30	26 : — : —	10·0	Id., id.; rain$^{0·8}$
	3	375	56·4	54·7	1·7	0·0	0·0	14	26 : — : —	10·0	Loose scud; cirrous mass; clouds thinner; rain$^{0·5}$
	4	370	55·3	53·4	1·9	0·1	0·0	18	25 : — : —	10·0	Id.; id.; id.
	5	363	54·9	52·4	2·5	0·1	0·0	20	24 : — : —	10·0	Id.; id.
	6	359	54·1	52·4	1·7	0·0	0·1	24 v.	24 : — : —	10·0	Id.; id.; rain$^{0·2}$
	7	358	53·2	52·0	1·2	0·0	0·0	14	26 : — : —	10·0	Id.; cirro-stratous scud, cir. mass; rain to E.
	8	353	51·5	50·5	1·0	0·0	0·0	20	24 : — : —	10·0	Id.; id., id.
	9	359	50·9	50·1	0·8	0·1	0·0	18	25 : — : —	10·0	Id.; id., id.; rain$^{0·2}$

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
22 10	29·361	50·7	50·0	0·7	0·1	0·1	19		10·0	Nearly as before; rain$^{0·5}$
11	360	50·1	49·8	0·3	0·1	0·0			10·0	Scud; id.
12	359	49·9	49·4	0·5	0·2	0·1			10·0	Id.; dark; rain$^{1·0}$
13	29·349	49·8	49·4	0·4	0·1	0·0	24		10·0	Scud; dark.
14	348	50·0	49·4	0·6	0·1	0·0	25		10·0	Id.
15	340	50·0	49·4	0·6	0·1	0·0	22		10·0	Id.
16	341	50·0	49·5	0·5	0·1	0·0	18		10·0	Id.
17	333	50·5	49·7	0·8	0·0	0·0	20	24 : — : —	10·0	Id.; cirro-strati and cirrous mass.
18	341	50·7	49·9	0·8	0·1	0·0	21	24 : — : —	10·0	Id.; id.
19	350	51·3	50·2	1·1	0·1	0·1	20	22 : 24 : —	10·0	Stratous scud to E.; cirro-stratous scud; cirrous mass.
20	354	53·1	51·6	1·5	0·1	0·1	20	22 : 24 : —	9·9	Nearly as at 19h.
21	369	56·5	53·9	2·6	0·2	0·1	20	22 : — : —	9·9	Scud; cirro-strati.
22	377	56·7	53·9	2·8	0·1	0·1	21	22 : 24 : —	9·9	Id.; id.
23	384	58·4	54·2	4·2	0·1	0·0	22	21 : 22 : —	9·8	Id., cumuli; cirro-cumulo-strati, cirri.
23 0	381	63·6	57·8	5·8	0·1	0·1	21	23 : — : —	9·5	Id., cirro-cumulo-strati; cumulo-strati, cirri.
1	381	62·6	56·4	6·2	0·2	0·2	20	23 : — : —	9·2	Nearly as last hour.
2	381	64·2	56·7	7·5	0·3	0·2	24	22 : 23 : —	8·2	Scud, cumuli, cum.-str; woolly cirro-cumuli, cirri. ⊖
3	380	62·9	55·7	7·2	0·3	0·2	22	22 : — : —	7·8	Nearly as before; nimbi. ⊖
4	385	61·8	55·0	6·8	0·3	0·2	25	22 : — : —	9·5	Id.; id. [cir.-cum.-str.
5	396	60·2	55·0	5·2	0·3	0·2	19	23 : 22 : —	9·8	Masses of scud, cumuli, cumulo-strati; nimbi, cirri,
6	407	55·7	54·0	1·7	0·4	0·3	18	22 : — : —	9·8	Nearly as last hour; rain^{3}
7	419	55·0	52·4	2·6	0·3	0·1	24	22 : — : —	9·7	Masses of scud, cir.-str. scud; cirri and cirro-strati.
8	436	54·1	52·1	2·0	0·1	0·1	24	21 : — : —	9·9	Id., id.; id.
9	447	53·8	51·9	1·9	0·3	0·1	22	— : 17 : —	9·5	Large cirro-cumuli; scud and cirro-strati.
10	449	52·2	50·8	1·4	0·1	0·1	18	— : 19 : —	6·5	Id.; id.
11	456	49·2	48·7	0·5	0·1	0·1	20		5·0	Cirro-cumulo-strati, cirro-strati.
12	464	48·5	48·0	0·5	0·1	0·1	20		9·0	Id., id.
13	29·465	50·0	49·4	0·6	0·1	0·0	20		9·8	Cirro-cumulo-strati, cir.-str.
14	471	49·6	49·0	0·6	0·0	0·0			9·9	Id., id.
15	470	49·7	49·2	0·5	0·0	0·0			9·8	Id.? id.
16	477	49·0	48·6	0·4	0·0	0·0	18		8·8	Id., id., cirri.
17	482	46·7	46·5	0·2	0·0	0·0	18		3·0	Id., id., id., mist on the ground.
18	497	45·0	44·7	0·3	0·0	0·0	20	— : 10 : 21	6·0	Cir.-cum.-str.; mottled and linear cirri; id.
19	520	49·3	48·5	†0·8	0·0	0·0	23		2·5	Cirri; cirro-strati on horizon.
20	526	50·4	49·5	0·9	0·0	0·0	23	— : — : 10	2·5	Curled, reticulated, and woolly cirri; cirro-strati. ⊙
21	536	53·3	52·0	‡1·3	0·1	0·1	16	— : — : 13	3·0	Id., id., id.; range of cum. to N. ⊙
22	539	56·2	53·7	2·5	0·1	0·0	12	— : — : 14	4·5	Curled and woolly cir.; range of cum. round hor. ⦶
23	543	58·7	54·4	4·3	0·1	0·1	11	— : — : 18	4·0?	Id.; id. ⦶
24 0	542	60·6	55·4	5·2	0·1	0·1	10	10 : — : —	3·5	Loose cumuli; cumuli, cirro-cumuli, and cir.-str. ⊙
1	542	61·8	54·9	6·9	0·2	0·0	10	10 : — : —	2·5	Id.; id., id., id. ⊙
2	543	62·2	55·0	7·2	0·2	0·1	10	11 : — : —	3·5	Id.; id., id., id. ⊖
3	543	63·3	55·7	7·6	0·2	0·4	8	20 : — : —	8·0	Scud and loose cumuli; piles of cumuli, id.
4	550	61·6	56·5	5·1	0·4	0·2	4	4 : 24 : —	5·0	Id.; id., id. ⦶
5	556	60·2	54·8	5·4	0·4	0·2	6	4 : 24 : —	6·5	Scud; cumulo-strati, cirro-cumulo-strati; hazy. ⊖
6	560	59·1	54·0	†5·1	0·3	0·1	6	St. : 28 : —	5·0	Nearly as at 5h; scud dissipating. ●
7	577	56·8	53·8	‡3·0	0·1	0·0	18	— : 28 : —	7·5	Id. ☽
8	589	54·6	51·9	2·7	0·1	0·0	22	— : 30 : —	3·0	Cirro-cumulo-strati.
9	597	49·6	48·8	0·8	0·1	0·0	22		1·0	Id. ☽
10	600	46·8	46·6	0·2	0·1	0·0	18		0·8	Id.; mist on the ground. ☽
11	607	44·2	43·9	0·3	0·0	0·0	23		3·0	Id., id. ☽
12	606	44·3	44·2	0·1	0·1	0·0	20		2·0	Id., haze. ☽
22½	29·618	59·9	54·6	5·3	0·4	…	24		……	Sunday—Cloudy, cir.-cum.-str., scud, occasional sunshine.
25 13	29·710	50·4	47·1	3·3	0·6	0·1	20		10·0	Scud, cirro-cumulo-strati.
14	713	49·5	46·8	2·7	0·2	0·1			10·0	Id., id.
15	715	49·5	47·1	2·4	0·1	0·0			10·0	Id., id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Aug. 23d 19h. Observation made at 19h 45m.

Aug. 24d 5h. Clouds electric-looking; a peal of distant thunder heard; black to W.

Gött. Mean Time.		Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.	
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From				
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.		
25	16	29·724	48·7	46·8	1·9	0·0	0·0			10·0	Scud, cirro-cumulo-strati.	
	17	736	48·2	46·6	1·6	0·0	0·0			10·0	Id., id.	
	18	748	48·5	46·9	1·6	0·0	0·0			10·0	Id., id.	
	19	764	50·0	48·4	1·6	0·0	0·0	20	— : 23 : —	10·0	Cirro-stratous scud; loose scud.	
	20	771	52·5	49·3	3·2	0·0	0·0	22		10·0	Id.; id.; cirro-cumulo-strati.	
	21	770	53·4	48·9	4·5	0·2	0·1	29	— : 29 : —	9·5	Cirro-cumulo-strati; scud on horizon.	
	22	770	56·1	48·4	7·7	0·3	0·4	28	— : 28 : —	9·9	Id.; id.	
	23	765	56·3	48·2	8·1	0·7	0·2	29	— : 28 : —	7·0	Id.; cirri and cirro-strati.	⊖
26	0	763	57·5	49·6	7·9	0·4	0·2	28	— : 28 : —	8·0	Id.; cirri.	●
	1	754	60·2	51·5	8·7	0·5	0·4	23	— : 28 : —	8·0	Id.; id.	⦶
	2	747	60·0	51·5	8·5	0·8	0·6	22	— : 28 : —	8·0	Id.; cirrous haze on horizon.	⊖
	3	739	61·8	53·4	8·4	1·3	0·6	25	— : 28 : —	8·5	Id.; id.	⊖
	4	743	60·2	52·0	8·2	1·5	0·7	27	— : 28 : —	9·0	Id.; id.	⊖
	5	739	60·0	52·0	8·0	1·2	1·1	27	— : 28 : —	8·5	Id.; id.	⊖
	6	740	55·7	50·7	†5·0	0·9	0·2	26	— : 27 : —	3·0	Cirro-cumulous scud; cirro-cumuli, cir. haze, cir-str.	
	7	745	54·3	49·3	5·0	2·2	0·7	26	— : 27 : —	2·0	Id.; id.	⊙
	8	766	51·2	47·9	⸸3·3	0·6	0·2	26	— : 27 : —	1·0	Cirro-stratous scud; cirrous haze.	☽
	9	764	50·5	47·0	3·5	0·3	0·2	24		0·4	Cirro-strati.	
	10	763	49·2	45·6	3·6	0·2	0·3	25		0·2	Id.; cirrous haze on horrizon.	☽
	11	776	46·3	44·2	2·1	0·3	0·2	24		0·2	Id.; id.	☽
	12	787	46·0	43·9	2·1	0·3	0·1	16	28 : — : 28	0·8	Cirro-stratous scud; thin cirri; lunar corona.	☽
	13	29·800	43·3	42·3	1·0	0·1	0·0	14		1·8	Scud; sheets of thin cirri; lunar corona.	☽
	14	812	42·0	41·7	0·3	0·1	0·0	20	28 : — : 28	5·0	Cirro-cumulous scud; thin cirri.	☽
	15	809	42·6	41·5	1·1	0·0	0·0	17		0·2	Sheet of thin cirri.	☽
	16	809	38·9	38·7	0·2	0·1	0·0	17		0·5	Id.; lunar corona of an elliptic form.	☽
	17	806	38·9	38·0	0·9	0·0	0·0	18		0·5	Id.	
	18	815	38·5	38·0	†0·5	0·1	0·1	18	— : — : 28	3·0	Thin sheets of woven cirri; strati on Cheviot.	⊙
	19	830	40·6	39·9	0·7	0·1	0·1	22	— : — : 29	5·0	Woolly cirri over most of the sky; haze on hor.	⊙
	20	833	45·4	43·4	2·0	0·2	0·2	20	— : — : 29	4·0	Id.; id.	⊙
	21	834	49·7	45·0	⸸4·7	0·2	0·2	22	— : — : 28	2·0	Linear cirri and haze round horizon.	⊙
	22	839	51·3	43·9	7·4	0·2	0·2	24	— : — : 28	2·0	Woolly cirri; band of cir.-str. to E.; haze on hor.	⊙
	23	835	53·9	47·0	6·9	0·3	0·3	26		1·0	Cirri and haze on horizon.	⊙
27	0	828	56·5	50·0	6·5	0·5	0·4	22	28 : — : —	0·5	A few patches of scud; cirro-strati; haze.	⊙
	1	825	58·2	50·0	8·2	0·4	0·5	22		1·0	Linear cirri; haze to E.	⊙
	2	822	60·2	51·0	9·2	0·7	0·5	25	— : — : 27	1·5	Woolly, mottled, and linear cirri; cirro-strati.	⊙
	3	819	61·0	53·0	8·0	0·7	0·5	23	— : — : 27	2·0	Id.	⊙
	4	818	61·4	52·2	9·2	0·5	0·4	25	27 : — : 27	2·0	Cirri; scud; cirro-strati; haze.	⊙
	5	820	60·0	51·8	8·2	0·3	0·3	28	28 : — : —	5·0	Nearly as before.	⊙
	6	824	58·9	51·2	†7·7	0·4	0·4	27	— : — : 26	4·5	Varieties of cirri; cir.-str. scud; cirro-strati; hazy.	⦶
	7	841	54·2	49·6	⸸4·6	0·3	0·1	25	— : — : 26	7·0	Nearly as at 6h; woolly cirro-cumuli.	⦶
	8	856	50·8	47·2	3·6	0·1	0·1	30	— : 26 : 26	3·5	Bands of woolly cirri; cir.-cum.; cir.-str.; hazy.	☽
	9	871	49·0	46·1	2·9	0·1	0·0	20	— : 26 : 26	2·8	Nearly as before.	☽
	10	876	46·8	45·1	1·7	0·0	0·0	30	— : 27 : —	9·8	Cirro-cumulo-strati.	☽
	11	875	45·0	44·0	1·0	0·0	0·0	29	— : 28 : —	5·0	Id.; cirro-strati; hazy.	)
	12	885	44·0	43·3	0·7	0·1	0·0	29	— : 28 : —	7·0	Nearly as before.	☽
	13	29·886	45·2	44·2	1·0	0·0	0·0	31	— : 28 : —	10·0	Cirro-cumulo-strati; cirro-strati; haze.	
	14	882	46·2	45·0	1·2	0·1	0·0	22	— : 28 : —	10·0	Same as before.	
	15	870	45·9	44·6	1·3	0·1	0·0	20		9·9	Cirro-cumulo-strati; cirro-strati; cirri; hazy.	)
	16	879	43·2	42·9	0·3	0·0	0·0	16		7·0	Cirri; id.; haze.	)
	17	881	42·0	41·6	0·4	0·0	0·0	15	— : 28 : —	5·0	Nearly as before.	☽
	18	894	42·7	41·9	†0·8	0·1	0·0	20	— : 28 : —	7·0	Cirro-cumuli; cirro-strati; cirrous haze.	⊙
	19	908	47·3	45·5	1·8	0·0	0·0	20	— : 29 : —	7·0	Cirro-cumulo-strati; hazy on horizon.	⊙
	20	920	50·6	47·7	2·9	0·0	0·0	16 v.	— : 29 : —	4·0	Woolly cirro-cumuli; cirro-cumulo-strati.	⦶
	21	918	52·8	49·0	⸸3·8	0·0	0·1	18	— : 29 : —	0·8	As at last hour; sky milky.	⊙
	22	920	54·1	49·4	4·7	0·1	0·1	28		0·5	Cirro-cumulo-strati; scud on E. horizon.	⊙
	23	916	56·0	50·9	5·1	0·1	0·1	30 v.		0·2	Cirri; id.	⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Aug. 27d 7h. Bands of woven cirri stretching from WNW. 8h. A small corona about 6′ broad round the Moon, produced by haze.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
28	0	29·913	58·4	51·3	7·1	0·1	0·1	28 v.		0·2	Cirrous haze; scud on E. horizon. ⊙
	1	909	60·3	51·6	8·7	0·1	0·0	var.		0·2	Id.; id. ⊙
	2	904	62·2	53·2	9·0	0·1	0·1	var.		0·5	Linear cirri; cirrous haze; cirro-stratous scud to SE. ⊙
	3	902	63·3	53·1	10·2	0·1	0·0	2 v.	— : — : 0	0·8	Cirri; id.; id. ⊙
	4	899	65·8	57·1	8·7	0·1	0·1	14	— : — : 2	0·5	As before. ⊙
	5	890	65·3	55·7	†9·6	0·1	0·0	14		0·5	Id. ⊙
	6	886	64·9	55·5	9·4	0·1	0·1	15	— : — : 0	0·8	Woolly cirri; cirro-cumulo-strati. ⊙
	7	900	59·2	55·1	4·1	0·3	0·3	2	— : — : 0	2·0	Id.; id. ⊙
	8	905	55·2	52·4	⸸2·8	0·2	0·1	4		1·0	Id. ☽̸
	9	911	53·0	51·2	1·8	0·1	0·0	4		0·5	Id. ☽
	10	922	49·0	48·2	0·8	0·1	0·0	17		0·2	Haze on horizon. ☽
	11	922	46·4	45·3?	1·1	0·1	0·0			0·0	Clear; dewy. ☽
	12	930	44·6	44·3	0·3	0·1	0·0			0·0	Id. ☽
	13	29·928	45·4	44·8	0·6	0·0	0·0			0·0	Clear; a little mist. ☽
	14	921	42·9	42·7	0·2	0·0	0·0			0·0	Misty. ☽
	15	919	42·2	42·2	0·0	0·0	0·0			0·0	Very misty. ☽
	16	912	41·4	41·4	0·0	0·0	0·0			0·0	Id. ☽
	17	915	40·2	40·1	0·1	0·0	0·0			0·5	Id.; thick haze on E. horizon. ☽
	18	923	38·8	38·8	0·0	0·0	0·0			0·2	Id. ☽ ⦶
	19	930	42·5	42·0	†0·5	0·0	0·0			1·0	Mist, objects invisible at 1 mile. ⦶
	20	933	45·0	44·8	0·2	0·0	0·0	20	24 : — : —	2·0	Mist clearing off; cirrous scud. ⊙
	21	929	50·2	49·2	⸸1·0	0·1	0·0	25		0·0	Hazy to E. ⊙
	22	923	54·8	52·5	2·3	0·1	0·0	26		0·0	Id. ⊙
	23	916	60·7	56·0	4·7	0·0	0·0	6		0·0	Id. ⊙
29	0	908	66·0	58·2	7·8	0·2	0·2	10		0·0	Id. ⊙
	1	895	68·7	60·0	8·7	0·3	0·2	14		0·0	Id. ⊙
	2	890	70·0	60·4	9·6	0·3	0·2	15	15 : — : —	0·1	Patches of scud; haze to E. ⊙
	3	881	70·9	60·0	10·9	0·4	0·4	14		0·0	Hazy on horizon. ⊙
	4	879	71·0	60·3	10·7	0·4	0·3	15	16 : — : —	0·1	Patches of scud; hazy. ⊙
	5	872	70·2	60·6	9·6	0·4	0·3	14	16 : — : —	0·1	Id.; id. ⊙
	6	857	67·9	58·8	†9·1	0·7	0·3	14		0·0	Hazy on horizon. ⊙
	7	861	64·0	57·4	6·6	0·3	0·3	15		0·5	Cirri amongst haze to E. ⊙
	8	881	57·4	54·5	⸸2·9	0·3	0·0	27		0·2	Id. ☽
	9	883	56·2	54·3	1·9	0·1	0·0	20		0·2	Cirri; cirro-cumulo-strati to NW. ☽̸
	10	887	54·2	52·0	2·2	0·2	0·1	18		0·0	Hazy on horizon. ☽
	11	893	51·3	50·9	0·4	0·1	0·0	15		0·0	Id. ☽
	12	892	49·0	48·4	0·6	0·1	0·0	20		0·1	Woolly cirri to NW. ☽
	13	29·892	46·8	46·0	0·8	0·0	0·0	22	— : 30 : —	0·8	Woolly cir.-cum. and cir. to W.; mist on ground. ☽
	14	891	45·0	44·2	0·8	0·1	0·0	20	— : 30 : 30	1·5	Sheets of cirri and cirro-cumuli. ☽
	15	886	46·2	45·2	1·0	0·1	0·1	20	— : 30 : —	5·5	Sheet of fine cirro-cumuli. ☽̸
	16	879	44·9	44·2	0·7	0·0	0·0	20	— : 30 : —	6·8	Id. ☽̸
	17	885	43·7	43·0	0·7	0·0	0·0	20	— : 29 : —	8·2	Id.; mist or stratus. ☽̸
	18	894	43·0	42·1	†0·9	0·0	0·0	20	— : 30 : —	8·5	Cirro-cumuli; fine cirri; mist, haze. ☽̸ ⦶
	19	907	45·2	44·8	0·4	0·0	0·0	22	— : 1 : —	7·5	Id.; id.; id. ☽̸ ⦶
	20	913	48·0	47·0	1·0	0·1	0·1	21		4·0	Id.; mist, haze. ⦶
	21	914	53·7	52·0	⸸1·7	0·1	0·0	18	— : 29 : —	7·5	Id.; id. ⦶
	22	915	61·0	56·6	4·4	0·1	0·0	17	— : 29 : —	7·0	Id.; id. ⊙
	23	913	64·1	58·6	5·5	0·0	0·1	31	— : 28 : —	8 0	Id.; haze on horizon. ⦶
30	0	907	67·5	60·4	7·1	0·0	0·0	20	— : 28 : —	6·5	Cirro-cumulo-strati; hazy to E. ⦶
	1	905	69·0	61·9	7·1	0·1	0·0	20	— : 27 : —	4·5	Id.; id. ⦶
	2	902	71·3	61·9	9·4	0·3	0·2	18		4·5	Mottled cirri; cirro-cumuli; cirro-cumulo-strati. ⦶
	3	900	71·6	61·3	10·3	0·3	0·2	21	19 : — : —	4·5	Patches of scud; mottled cirri; cirro-cumulo-strati. ⊙
	4	900	71·4	61·4	10·0	0·3	0·3	20	— : 26 : 26	6·0	Woolly and mottled cirro-cumuli; cymoid cirri; haze. ⦶
	5	902	71·3	61·6	†9·7	0·3	0·3	22	— : 26 : —	2·8	Id.; cumulo-strati. ⊙
	6	900	67·9	60·1	7·8	0·3	0·2	21	— : 26 : —	6·2	Id.; id. ⦶
	7	911	65·3	60·0	⸸5·3	0·1	0·0	21	— : 26 : —	3·5	Id.; id. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1ʰ.	10ᵐ.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
30 8	29·923	61·3	57·9	3·4	0·1	0·0	23	— : 26 : —	6·5	Woolly or mottled cirro-cumuli; cumulo-strati.
9	937	60·3	56·8	3·5	0·1	0·1	20		7·0	Id., with a bay to the W.
10	957	56·3	54·3	2·0	0·1	0·0	18		6·0	Id.; haze on horizon. ☽
11	968	55·1	53·7	1·4	0·1	0·0	20	— : 26 : —	8·5	Id. ☽
12	976	52·9	51·9	1·0	0·1	0·0	18	— : 26 : —	9·0	Woolly cirro-cumuli; cirro-strati. ☽
13	29·987	52·4	51·3	1·1	0·1	0·0	16	— : 26 : —	9·8	Woolly cirro-cumuli; cirro-strati. ☽
14	987	52·2	51·1	1·1	0·0	0·0	16	— : 26 : —	9·0	Id.; id. ☽
15	992	49·9	48·7	1·2	0·1	0·0	16		8·0	Id.; id. ☽
16	29·996	51·7	50·7	1·0	0·0	0·0	16		8·5	Id.; id. ☽
17	30·003	52·1	51·0	1·1	0·0	0·0	17		10·0	Id.; red from E. to zenith.
18	012	52·6	51·3	1·3	0·1	0·1	23	28 : — : —	10·0	Scud. ⊖
19	022	53·0	52·0	1·0	0·1	0·1	17	24 : — : —	10·0	Id.; woolly and other cirri; thick haze to E.
20	041	55·8	53·9	1·9	0·1	0·1	23	— : 24 : —	9·5	Cirro-stratous scud; cirri as before; cirro-strati. ⊖
21	055	59·3	56·8	2·5	0·1	0·0	20	— : 25 : —	5·0	Cirro-cumuli; pure cirri. ⦶
22	062	67·0	62·1	4·9	0·2	0·3	17	— : — : 26	6·5	Woolly and pure cirri. ⦶
23	060	70·9	64·2	6·7	0·4	0·4	18	— : — : 24	8·2	Id. dispersed on sky; cir.-cum. ⦶
31 0	062	70·7	63·2	7·5	0·5	0·3	17	— : 24 : 24	7·0	Cirri; cir.-str.; cir.-cum.; patches of scud; haze. ⦶
1	058	69·8	61·2	8·6	0·3	0·1	17	— : 25 : —	6·0	Id.; cumuli and haze. ⦶
2	053	70·7	62·2	8·5	0·6	0·2	22	— : 25 : 25	7·0	Id.; small cumuli. ⊖
3	057	71·6	62·8	8·8	0·5	0·2	20	— : 24 : 24	5·0	Id.; cirro-cumuli; small cum.-str.; loose cum. ⊖
4	059	71·3	63·8	7·5	0·5	0·3	20	— : 24 : 24	6·0	Id. ⊖
5	064	70·8	62·9	7·9	0·4	0·2	20		7·0	Id.; cirro-cumuli; cirrous cones; cumuli. ⊖
6	068	67·9	60·0	7·9	0·5	0·0	17	— : 26 : 26	7·0	As before. ⊖
7	065	66·3	60·7	5·6	0·1	0·0			7·0	Woolly and mottled cirri; cirro-strati. ⊖
8	069	61·1	57·6	3·5	0·1	0·0	24	— : 24 : 24	4·0	Cirri; cirro-cumuli; id.
9	078	57·8	54·9	2·9	0·0	0·0	20	— : 24 : 24	9·0	As before.
10	083	57·0	54·2	2·8	0·0	0·0	22	— : 24 : 24	9·5	Id. ☽
11	081	55·1	53·7	1·4	0·1	0·1	16		1·0	Fine cirri. ☽
12	089	52·8	51·9	0·9	0·1	0·1	18	— : 26 : —	0·5	Loose cirro-cumuli. ☽
22	30·110	65·7	60·8	4·9	0·1	...			......	Sunday—Nearly cloudless; a few cirri.
1 13	30·123	50·0	48·8	1·2	1·0	0·0	20		0·0	Hazy on horizon. ☽
14	119	48·1	47·3	0·8	0·1	0·1	22		0·0	Id. ☽
15	123	46·5	45·5	1·0	0·0	0·0	20		0·0	Id. ☽
16	125	47·2	46·3	0·9	0·1	0·1	18		0·0	Id. ☽
17	115	45·4	43·9	1·5	0·1	0·1	18		0·2	Cirri, tinged red to E. ☽
18	118	45·2	44·7	†0·5	0·1	0·1	18		0·3	Id. ⦶ ☽
19	120	47·8	46·9	0·9	0·0	0·0	20		0·2	Cirri to E. ⊙ ☽
20	123	51·4	49·2	‡2·2	0·0	0·0	20		0·2	Id. ⊙ ☽
21	124	57·3	53·9	3·4	0·1	0·1	24 v.		0·8	Id. ⊙ ☽
22	125	62·0	57·5	4·5	0·1	0·1	23		0·2	Id. ⊙ ☽
23	118	67·3	61·7	5·6	0·0	0·0	16		0·3	Id. ⊙
2 0	106	72·0	61·9	10·1	0·2	0·0	14		0·3	Cirri; cirrous haze on E. horizon. ⊙
1	096	74·4	59·7	14·7	0·0	0·0	4		0·5	Id.; id. ⊙
2	087	75·7	62·1	13·6	0·1	0·2	8		0·5	Id.; id. ⊙
3	079	77·0	65·7	11·3	0·3	0·2	6		0·4	Id.; id. ⊙
4	072	75·0	65·0	10·0	0·3	0·3	4		0·4	Id.; id. ⊙
5	061	72·8	64·7	8·1	0·4	0·3	4		0·6	Id.; id. ⊙
6	061	69·3	63·3	†6·0	0·3	0·2	2		0·8	Id.; id. ⊙
7	061	65·2	61·2	‡4·0	0·2	0·1	18	— : — : 16	2·0	Id.; id.
8	069	61·4	58·9	2·5	0·1	0·1	2		1·0	Id.; id.
9	077	56·9	55·7	1·2	0·1	0·0	18		1·0	Id.; id.; mist on the ground. ☽
10	076	53·5	53·0	0·5	0·1	0·0	18		0·5	Id.; id.; id. ☽
11	078	52·0	51·7	0·3	0·0	0·0	20		0·2	Id.; mist on the ground. ☽
12	086	50·2	49·7	0·5	0·0	0·0	20		0·2	Id.; id. ☽
13	30·085	48·7	48·3	0·4	0·0	0·0	20		0·2	Cirri; mist becoming thicker. ☽

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.
Sept. 1ᵈ 19ʰ. Observation made at 19ʰ 8ᵐ.

Gott. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.	
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.		
2 14	30·084	46·7	46·3	0·4	0·0	0·0	20		0·2	Cirri; mist becoming thicker.	☽
15	075	46·8	46·6	0·2	0·0	0·0	20		10·0	Thick fog; lunar corona.	☽
16	062	44·2	44·0	0·2	0·0	0·0			10·0	Id.; id.	☽
17	053	45·7	45·6	0·1	0·0	0·0			10·0	Id.; id.	☽
18	054	47·3	47·1	0·2	0·0	0·0	18		10·0	Fog, objects invisible at 100 yards.	
19	059	50·0	49·9	0·1	0·0	0·0	5		10·0	Id., id.	
20	067	51·8	51·7	0·1	0·0	0·0	6		10·0	Id., id. at 200 yards.	
21	075	54·3	53·6	0·7	0·0	0·0	8		10·0	Fog, objects invisible at 300 yards; loose scud above.	
22	082	54·7	53·8	0·9	0·3	0·1	2		10·0	Id. 1 mile; id.	
23	079	61·0	58·2	2·8	0·1	0·1	28	10 : — : —	8·0	Loose cumuli; haze on E. horizon.	⊖
3 0	070	63·2	59·7	3·5	0·2	0·2	4		2·0	Cumuli; haze on horizon.	⊙
1	066	65·7	59·7	6·0	0·6	0·6	2	11 : — : —	2·0	Id.; id.	⊙
2	068	66·8	60·8	6·0	0·9	0·6	2	11 : — : —	2·0	Id.; cumuli; haze on horizon.	⊙
3	059	62·8	59·1	3·7	0·9	0·9	6	12 : — : —	3·0	Loose cumuli; scud, cumuli, haze on horizon.	⊙
4	055	60·7	57·7	3·0	1·1	0·7	4	7 : 8 : 12	1·5	Scud; hazy to E.	⊙
5	051	61·0	56·5	4·5	0·9	0·5	4		0·5	Id.; haze on E. horizon.	⊙
6	061	60·1	55·9	†4·2	0·5	0·4	8	10 : — : —	0·8	Id.	⊙
7	059	57·2	54·5	2·7	1·2	0·6	5		0·6	Id.	⊙
8	080	54·3	53·0	‡1·3	0·6	0·3	5	8 : — : —	1·0	Scud passing rapidly, very dense to N.	
9	084	52·9	52·0	0·9	0·5	0·1	1		1·0	Scud on horizon.	
10	083	54·3	53·6	0·7	0·2	0·2	4		10·0	Scud.	
11	090	53·8	53·3	0·5	0·5	0·1	6		10·0	Loose scud.	
12	082	54·3	53·6	0·7	0·3	0·2	6	6 : — : —	9·0	Id.	♃
13	30·073	54·2	53·4	0·8	0·3	0·2	6	6 : — : —	8·0	Loose scud.	♃
14	062	54·6	53·7	0·9	0·3	0·2	6	6 : — : —	9·9	Id.	♃
15	058	55·6	54·6	1·0	0·6	0·3	4	— : 10 : —	8·0	Cirro-cumulous scud.	♃
16	051	55·7	54·6	1·1	0·4	0·1	4		10·0	Scud; cirro-cumulous scud.	
17	017	55·7	54·7	1·0	0·4	0·3	6		10·0	Nearly homogeneous.	
18	051	55·7	54·7	1·0	0·3	0·3	6		10·0	Id.	
19	058	55·7	54·7	1·0	0·4	0·2	4		10·0	Id.	
20	070	56·4	55·0	1·4	0·4	0·2	3	6 : — : —	10·0	Scud.	
21	073	58·0	56·0	2·0	0·3	0·3	4	6 : — : —	6·5	Stratous scud; loose cirro-cumuli.	⊖
22	065	61·2	57·8	3·4	0·6	0·9	6	6 : — : —	1·5	Id.	⊙
23	061	63·2	59·2	4·0	0·6	0·4	5		0·2	Patches of scud; hazy on horizon.	⊙
4 0	058	65·1	60·2	4·9	0·7	0·7	6	8 : — : —	0·2	Id.; id.	⊙
1	051	65·5	60·4	5·1	0·8	0·6	5		0·2	Id.; id.	⊙
2	042	65·5	59·8	5·7	1·5	0·6	6	8 : — : —	0·5	Loose cumuli; cumuli; haze on horizon.	⊙
3	030	65·7	59·7	6·0	1·2	0·7	5		0·1	Patches of scud; haze on E. horizon.	⊙
4	018	64·3	58·3	6·0	1·2	0·6	5		0·1	Id.; haze; cirri to S.	⊙
5	013	63·0	57·5	5·5	1·2	0·8	6		0·1	Cirro-strati; haze on E. and S. horizon.	⊙
6	005	60·3	55·4	†4·9	0·9	0·6	4		0·4	Cirro-strati and loose cumuli on S. and E. horizon.	⊙
7	006	58·9	55·0	‡3·9	0·7	0·4	4	— : 7 : —	9·2	Cirro-stratous scud.	
8	011	57·8	55·0	2·8	0·5	0·3	3	7 : — : —	9·9	Thick scud; sky to N.	
9	021	57·2	55·1	2·1	0·3	0·3	2		10·0	Densely clouded.	
10	017	56·7	55·0	1·7	0·4	0·3	2		10·0	Dark.	
11	015	56·7	55·0	1·7	0·3	0·3	4		10·0	Id.	
12	003	55·8	54·6	1·2	0·3	0·3	4		9·9	Scud and haze; lunar corona.	♃
13	30·003	55·6	54·3	1·3	0·3	0·2	4		10·0	Scud and haze.	
14	29·996	55·9	54·4	1·5	0·4	0·3	3		10·0	Id.	
15	981	56·3	54·8	1·5	0·3	0·2	3		10·0	Id.	
16	970	55·4	54·2	1·2	0·4	0·3	2		10·0	Id.	
17	957	55·1	54·0	1·1	0·3	0·4	3	8 : — : —	10·0	Misty scud.	☽
18	952	55·2	54·1	1·1	0·5	0·3	4	8 : — : —	10·0	Id.	
19	945	55·7	54·8	0·9	0·4	0·2	4	6 : — : —	10·0	Id.	
20	939	57·3	55·9	1·4	0·3	0·2	4	6 : 8 : 9	7·5	Loose scud; cirro-cumulous scud; mottled cirri.	⊖
21	933	59·4	57·3	2·1	0·4	0·3	5	6 : — : 9	7·0	Id.; mottled cirri.	⊖

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Sept. 4d 0h. Observation made at 0h 6m.

Sept. 4d 3½h. New floss silk put on wet-bulb thermometer: projecting sides and top put on thermometer board for the purpose of preventing radiation on clear nights.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
4	22	29·918	62·8	59·6	3·2	0·5	0·2	3	—: 8 : —	7·0	Cirro-cumulous scud; cirro-strati. ⊖
	23	908	64·0	59·8	4·2	0·7	0·6	6	8 : — : —	9·7	Scud; loose cumuli; cirro-strati.
5	0	898	64·9	60·7	4·2	0·8	0·5	4	8 : 8 : —	8·0	Id.; id.; woolly cirro-cumuli; cir.-str. ⊙
	1	885	65·2	60·4	4·8	0·7	0·8	5	8 : 8 : —	8·0	Id.; id.; id.
	2	876	66·6	60·4	6·2	1·2	1·2	8	7 : — : 10	2·2	Id.; sheets of mot. cirri; small cir.-cum.; cir.-str. ⊙
	3	852	64·8	60·0	4·8	1·2	1·1	4	8 : — : —	2·0	Id.; loose cumuli; cirro-cumuli; cirro-strati. ⊙
	4	847	63·5	59·3	4·2	1·4	1·3	5	7 : 10 : —	9·0	Id.; large cirro-cumuli; cirro-strati. ⊖
	5	835	59·4	57·0	2·4	1·9	1·0	5	6 : — : —	10·0	Id.
	6	838	58·0	55·9	2·1	1·3	0·8	5	6 : — : —	10·0	Loose scud.
	7	839	56·8	55·7	1·1	1·0	0·7	5	6 : — : —	10·0	Id.; slight Scotch mist.
	8	846	56·4	55·8	0·6	0·5	0·4	3		10·0	Scotch mist; $rain^{0·2}$
	9	844	56·2	55·7	0·5	0·6	0·6	4		10·0	Id.; id.
	10	839	56·0	55·6	0·4	0·3	0·2	4		10·0	Id.; id.
	11	831	56·0	55·4	0·6	0·3	0·3	4		10·0	Id.
	12	824	56·0	55·5	0·5	0·3	0·3	4		10·0	Id.; $rain^{0·2}$
	13	29·808	56·0	55·5	0·5	0·4	0·4	5		10·0	Scotch mist; $rain^{0·2}$
	14	804	56·0	55·5	0·5	0·4	0·4	3		10·0	Id.; $rain^{0·3}$
	15	795	56·0	55·7	0·3	0·4	0·3	4		10·0	Scud; $rain^{0·7}$
	16	782	56·2	55·9	0·3	0·4	0·3	5		10·0	Id.; $rain^{0·2}$
	17	776	56·3	55·9	0·4	0·2	0·2	3		10·0	Id.
	18	761	56·6	55·8	0·8	0·2	0·2	4	10 : — : —	10·0	Id.; cirrous mass.
	19	763	56·8	56·3	0·5	0·3	0·2	4		10·0	Scotch mist, objects invisible 1 mile off.
	20	752	57·5	57·0	0·5	0·3	0·4	3	4 : — : —	10·0	Misty scud; Scotch mist.
	21	753	58·0	57·3	0·7	0·4	0·2	6		10·0	The same as at 19h.
	22	747	59·2	58·5	0·7	0·3	0·2	4	7 : — : —	10·0	Misty scud, very low; dense mist to N.
	23	738	61·5	59·8	1·7	0·5	0·3	4	8 : — : —	9·9	Id., cumuli, &c. to E.
6	0	721	60·9	59·1	1·8	0·3	0·3	4	8 : — : —	9·9	Id.; cirro-strati to E.
	1	707	60·7	59·0	1·7	0·3	0·3	3	8 : — : —	10·0	Id.
	2	700	59·9	58·9	1·0	0·3	0·3	3	8 : — : —	10·0	Id.; sunshine to E.
	3	683	61·8	60·0	1·8	0·3	0·3	3	8 : — : —	10·0	Id., more broken.
	4	678	60·8	59·3	1·5	0·4	0·2	4	8 : — : —	10·0	Id.
	5	670	61·2	59·7	1·5	0·2	0·3	4	6 : 14 : —	9·9	Id.; scud, loose cumuli, cirro-strati, &c.
	6	658	61·4	59·8	1·6	0·3	0·2	3	6 : — : —	10·0	Id.
	7	658	59·6	58·8	0·8	0·2	0·1	4	15 : — : —	10·0	Scud; loose scud.
	8	653	58·8	58·2	0·6	0·1	0·1	2	15 : — : —	10·0	Id.
	9	644	58·0	57·6	0·4	0·1	0·1	4		9·9	Id.; a few stars seen dimly.
	10	647	58·0	57·7	0·3	0·1	0·1			10·0	Id.; dark.
	11	647	57·9	57·6	0·3	0·0	0·0			10·0	Dark; foggy.
	12	640	57·4	57·2	0·2	0·0	0·0			10·0	Id.; id.
	13	29·623	57·3	57·1	0·2	0·0	0·0			10·0	Dark; $rain^{0·5}$
	14	613	57·3	57·0	0·3	0·0	0·0			10·0	Id.
	15	607	57·0	56·8	0·2	0·0	0·0			10·0	Lighter.
	16	594	56·4	56·1	0·3	0·0	0·0	4	20 : 16 : —	7·0	Loose scud; cirro-cumulous scud; stratus. ☽
	17	593	56·7	56·2	0·5	0·1	0·0	20	— : 18 : —	9·0	Cirro-cumulous scud. ☽
	18	597	56·5	56·0	0·5	0·0	0·0	20	20 : — : —	9·7	Loose scud; cirro-cumulous scud; cirro-strati.
	19	597	56·8	56·4	†0·4	0·0	0·0	17	19 : 20 : —	9·0	Id.; id. ●
	20	606	58·8	57·8	1·0	0·0	0·0	20	19 : — : —	9·5	Id.; id.
	21	615	62·6	59·7	‡2·9	0·3	0·2	20	21 : 23 : —	9·0	Misty scud; cumuli; cir-cum.; mottled cirri; cir.-str.
	22	611	65·0	61·2	3·8	0·4	0·4	20	21 : 20 : —	9·0	Id.; id.
	23	606	66·0	62·6	3·4	0·3	0·2	20	23 : 21 : —	9·2	Scud; cumuli; cir.-cum.-str.; cir.-str.; cum.-str.
7	0	608	66·7	62·2	4·5	0·4	0·3	20	23 : 21 : —	9·0	As last hour. ●
	1	601	67·7	62·0	5·7	0·3	0·4	21	— ; 22 : —	8·5	Cirro-cumulo-strati; cumuli; cumulo-strati; cir.-str. ⊖
	2	601	67·3	62·3	5·0	0·2	0·2	19	— : 21 : —	9·9	Id.; piles of cumulo-strati; id.
	3	588	65·9	62·0	3·9	0·2	0·1	19	— : 21 : —	10·0	As last hour.
	4	576	67·8	63·0	4·8	0·1	0·0	18	— : 20 : —	10·0	Id.; drops of rain.
	5	576	66·2	62·1	4·1	0·1	0·1	17	— : 20 : —	9·7	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
7	6	29·565	65·2	62·1	3·1	0·1	0·0		20 : 20 : —	9·9	Scud; cir.-cum.-str.; piles of cumuli to SE.; drops of
	7	565	63·0	61·2	1·8	0·1	0·0	8	16 : — : —	9·8	Id.; cumuli; cirro-strati. [rain; electric looking.
	8	572	61·7	60·2	1·5	0·1	0·0		17 : — : —	10·0	Id.; rain⁴; thunder storm since 7h 15m.
	9	570	59·5	59·0	0·5	0·4	0·1	12	16 : — : —	9·5	Id.; sky in zenith; distant thunder; rain0·5
	10	582	57·7	56·5	1·2	0·9	0·9	5		10·0	Dark; occasional lightning; rain0·3
	11	609	54·4	54·0	0·4	0·7	0·4	3		10·0	Very dark; rain0·5
	12	611	54·1	53·7	0·4	0·4	0·6	3		10·0	Id.
	23	29·679	54·0	50·9	3·1	0·8	0·4	5	14 : — : —	10·0	Sunday—Overcast; homogeneous scud.
8	13	......	...	...	...	...	...			......	
	14	......	...	...	...	...	...			......	
	15	......	...	...	...	...	...			......	
	16	29·568	52·2	51·8	0·4	0·4	0·0			10·0	Homogeneous scud? rain0·2
	17	561	52·1	51·7	0·4	0·0	0·0	28		10·0	Id.
	18	562	52·4	51·9	0·5	0·0	0·0	27	28 : 22 : —	9·8	Misty scud; cirro-stratous scud; cirro-strati; cirri.
	19	566	51·8	49·6	2·2	0·2	0·1	20	20 : 0 : —	7·0	Id.; id.; woolly and linear cirri.
	20	558	51·4	50·0	1·4	0·0	0·0	22	20 : — : —	6·0	Id.; id.; id. ⊖
	21	561	54·0	51·3	2·7	0·2	0·2	25	22 : — : —	7·0	Loose scud; fine linear cirri. ⊙
	22	556	55·8	52·3	3·5	0·1	0·1	25	20 : — : —	7·5	Id. ⊖
	23	540	57·2	52·9	4·3	0·3	0·3	22	20 : — : —	5·0	Id.; fine linear cirri. ⊖
9	0	519	58·3	53·5	4·8	0·4	0·4	22	20 : — : —	2·5	Scud; loose cumuli; woolly and linear cirri. ⊙
	1	508	59·0	52·8	6·2	0·7	0·6	23		1·0	Id.; loose cumuli on horizon; woolly cirri. ⊙
	2	500	60·2	52·8	7·4	0·6	0·4	28	21 : — : —	1·2	Id.; woolly cirri. ⊙
	3	492	58·8	52·0	6·8	0·6	0·4	23		0·7	Id. ⊙
	4	493	58·0	51·4	6·6	0·9	0·6	22	21 : — : —	0·7	Id.; loose cumuli; loose cumuli on S. horizon. ⊙
	5	487	58·0	51·2	6·8	0·6	0·6	22		0·5	Id.; loose cumuli on S. horizon; cirro-strati. ⊙
	6	481	56·6	51·4	†5·2	0·8	0·4	24	— : 24 : —	6·5	Cirro-stratous scud; mottled cirro-strati; cirri. ●
	7	489	54·1	50·0	4·1	0·3	0·2	19	— : 25 : —	9·0	Id.; cirro-cumulous scud; cirri, &c.
	8	481	53·8	50·1	┼3·7	0·5	0·2	19	— : 25 : —	9·2	As last hour.
	9	477	54·0	50·1	3·9	0·3	0·2	20		9·5	Id.
	10	467	54·3	50·9	3·4	0·7	0·4	20		9·8	Id.
	11	458	54·3	51·1	3·2	0·8	0·2	20		9·9	Scud; cirro-strati.
	12	456	53·9	51·1	2·8	0·6	0·2	18		10·0	Id.
	13	29·452	53·7	51·6	2·1	0·5	0·5	20		10·0	Scud.
	14	458	53·0	51·8	1·2	0·7	0·2	21		7·5	Id.
	15	456	51·9	49·9	2·0	0·4	0·1	22		3·0	Thin scud and cirro-strati.
	16	460	50·6	48·5	2·1	0·2	0·2	20		2·5	Id. ☽
	17	467	47·0	45·7	1·3	0·3	0·0	6		0·2	Patches of cirro-cumulo-strati. ☽
	18	474	45·6	44·6	1·0	0·0	0·0	28		0·1	Id. ☽
	19	501	45·6	44·6	†1·0	0·1	0·1	22		0·2	Id. ⊙
	20	516	51·2	48·0	3·2	0·3	0·3	25	— : 26 : —	0·5	Cirro-stratous scud; mottled, &c. cirro-strati. ⊙
	21	526	53·6	49·2	┼4·4	0·4	0·4	22	— : 26 : —	1·0	id.; mottled cirri; cirro-strati. ⊖
	22	535	56·0	51·1	4·9	0·4	0·4	24	— : 26 : —	6·5	Cir.-cum.-str.: scud; patches of scud; loose cumuli. ⊖
	23	545	56·8	51·2	5·6	0·6	0·6	23	26 : — : —	4·5	Scud; loose cumuli; id. ⊙
10	0	548	58·3	51·3	7·0	0·4	0·4	26	28 : — : —	8·5	Id.; id.; range of cumuli to SE. ●
	1	559	58·8	51·1	7·7	0·5	0·3	26	28 : — : —	9·0	Id.; cumuli; cirro-strati. ●
	2	570	58·9	50·8	8·1	0·4	0·7	27	28 : 26 : —	8·0	Loose cumuli; cirrous edged cumuli moving variously.
	3	578	59·1	52·1	7·0	0·7	0·4	27	26 : — : —	9·0	Id.; scud; piles of cumulo-strati.
	4	594	60·2	53·1	7·1	0·4	0·3	26	— : 28 : —	7·5	Cir.-cum.-str., with scud dripping from it; cum.-str. ⊖
	5	608	58·0	51·4	6·6	0·3	0·1	28	— : 26 : —	9·0	id.; cirro-strati; woolly cirri.
	6	620	57·2	51·7	5·5	0·2	0·2	26	— : 26 : —	9·2	Cirro-cumulous scud; woolly cirro-cumuli; cirri.
	7	641	55·4	50·2	5·2	0·2	0·0	25	— : 24 : —	9·5	Id.; cirro-cumulo-strati.
	8	658	50·7	48·0	2·7	0·1	0·0	22	— : 25 : —	8·0	Id.; diffuse cirri; cirro-strati.
	9	675	50·0	47·4	2·6	0·1	0·1	22		2·0	Cirri and cirro-strati on horizon.
	10	688	48·1	46·1	2·0	0·1	0·0			1·0	Thin clouds near horizon.
	11	702	46·9	45·1	1·8	0·1	0·0			1·0	Id. on E. horizon.
	12	714	45·8	44·2	1·6	0·1	0·0			0·2	Clouds on N. and E. horizon.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Sept. 8d 16h. Observation made at 16h 6m.

Sept. 9d 17h. Observation made at 17h 20m.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
10 13	29·720	42·8	42·4	0·4	0·1	0·0	24		0·2	Clouds on N. and E. horizon.
14	722	43·9	43·2	0·7	0·2	0·0			0·2	Id. ; band of cloud to NE.
15	720	41·5	41·2	0·3	0·0	0·0			0·2	Id. ; id.
16	719	42·5	42·1	0·4	0·1	0·0	22		0·2	Id. ;
17	720	42·8	42·3	0·5	0·1	0·0	20		0·5	Patches of scud ; cirro-strati on horizon.
18	719	43·2	42·8	0·4	0·1	0·1	20	— : 25 : —	4·0	Cirro-cumulous scud ; loose scud ; cirro-strati.
19	720	45·0	44·2	†0·8	0·2	0·2	20		2·5	Cirri, cirro-strati, principally to W. ; heavy dew. ⊙
20	718	50·0	48·3	1·7	0·3	0·2	18		1·5	Cirri, cirro-strati. ⊙
21	713	54·1	51·1	↓3·0	0·3	0·3	19	— : — : 25	1·2	Linear cirri, patches of sheet cirri, cir.-cum.-str. ⦶
22	706	57·6	53·6	4·0	0·5	0·3	22		0·5	Cirri, cir.-str., and patches of scud near horizon. ⊙
23	701	59·4	54·1	5·3	0·5	0·5	22	23 : — : —	2·2	Scud ; linear and curled cirri ; cirro-strati to W. ⊖
11 0	695	62·3	56·8	5·5	0·7	0·5	22	23 : — : —	9·5	Id. ; loose cumuli.
1	687	58·1	55·1	3·0	0·7	0·5	20	23 : — : —	9·5	Id. ; cirri ; cirro-strati.
2	675	62·8	56·7	6·1	0·7	0·6	22	23 : — : —	9·8	Id.
3	665	61·5	56·3	5·2	0·7	0·7	18	23 : — : —	9·6	Id. ; cirro-cumulous scud ; cirri.
4	652	61·8	57·0	4·8	1·0	0·7	20	23 : — : —	9·8	Id.
5	646	61·0	55·1	5·9	0·9	0·5	20	23 : — : —	9·7	As before ; cirri ; drops of rain at $4^h\ 30^m$.
6	642	58·7	55·0	3·7	0·7	0·5	20	23 : — : —	6·0	Id.
7	644	57·2	54·0	3·2	0·6	0·3	21	24 : — : —	9·0	Scud ; cirro-cumulous scud ; cirro-strati.
8	647	56·5	53·7	2·8	0·9	0·5	21	24 : 24 : —	9·2	Id. ; cirro-strati ; drops of rain.
9	651	54·2	52·2	2·0	0·8	0·4	23		0·2	Patches of cloud to S.
10	647	52·8	51·3	1·5	0·5	0·3	20		0·2	Id. to NE.
11	653	52·2	50·4	1·8	0·6	0·3	20	— : 24 : —	6·0	Cirro-cumulous scud ?
12	656	52·8	50·9	1·9	0·2	0·2	22		7·0	Id.
13	29·646	52·2	51·0	1·2	0·3	0·0	21		5·0	Cirro-cumulous scud ?
14	651	52·9	51·0	1·9	0·4	0·7	23	24 : — : —	5·0	Scud ; passing shower[1]
15	659	50·8	48·5	2·3	0·4	0·3	23		2·0	Scud ? cirri ?
16	659	49·0	45·6	3·4	0·5	0·1			5·0	Cirri.
17	660	48·0	44·0	4·0	0·3	0·2	22		7·0	Cirri radiating from E. ; cirro-strati.
18	668	46·5	44·0	2·5	0·3	0·1	22	24 : 24 : 24	8·5	Scud ; woolly cir.-cum., cir.-str., and cirri ; rain to N.
19	682	46·8	44·3	2·5	0·3	0·2	21	25 : — : 26	6·0	Woolly and mottled cirri ; scud ; cirro-strati. ⦶
20	703	52·3	48·8	3·5	0·3	0·3	24	25 : — : —	7·5	Scud ; cirri lying WNW. to ESE ; cirro-strati. ⊖
21	706	53·8	48·7	5·1	0·8	0·7	25	25 : — : —	7·5	Id. ; cirri, cirro-strati.
22	726	54·7	49·2	5·5	0·9	0·5	23	25 : — : —	6·0	Id. ; id. ⊖
23	735	56·2	49·8	6·4	1·3	0·8	24	25 : — : —	7·5	Id. ; id. ⦶
12 0	749	57·2	49·8	7·4	1·9	1·8	22	25 : — : —	4·0	Id. ; id. ⦶
1	744	58·0	50·9	7·1	1·4	1·1	22	25 : — : —	6·5	Id. ; id. ⦶
2	741	59·2	50·6	8·6	1·6	1·5	22	25 : — : 25	6·0	Id. ; loose cumuli ; woolly and linear cirri ; cir.-str. ⦶
3	749	60·0	51·8	8·2	1·3	0·8	23	26 : — : 25	7·5	Id. ; id. ⦶
4	766	58·3	50·6	7·7	1·6	0·7	25		3·5	Id. ; cumuli ; cirri ; cirro-strati on horizon. ⊙
5	785	58·7	51·3	7·4	1·0	1·0	25	26 : — : 26	4·5	Id. ; loose cum. ; mottled and woolly cirri ; cir.-str. ⦶
6	793	54·8	49·0	†5·8	0·6	0·3	23	— : 26 : —	3·5	Cir.-str. scud ; mottled, woolly, and lin. cir. ; cum.-str. ⦶
7	810	51·8	47·8	↓4·0	0·3	0·2	23	— : 26 : —	3·8	Nearly as last hour.
8	828	49·9	46·7	3·2	0·2	0·2	23	— : 26 : —	3·0	Id.
9	844	47·7	45·7	2·0	0·2	0·1	22		1·5	Cirri, &c.
10	842	47·0	45·0	2·0	0·2	0·1	20		1·0	Id.
11	854	45·2	43·7	1·5	0·2	0·1	20		1·0	Cirri ; cirrous haze ; cirro-strati.
12	860	43·4	42·3	1·1	0·1	0·0			0·2	Cirrous haze near horizon.
13	29·864	43·1	42·2	0·9	0·0	0·0			0·2	Cirrous haze near horizon.
14	868	42·3	41·7	0·6	0·1	0·0			0·7	Cirri ; cirro-strati.
15	869	42·2	41·4	0·8	0·0	0·0			0·3	Cirri and cirrous haze near horizon.
16	870	41·6	40·9	0·7	0·0	0·0			6·0	Cirri and cirrous haze over the sky.
17	861	43·0	42·4	0·6	0·0	0·0			6·0	Loose cirro-cumuli ; cirri ; cirro-strati. [cir.-str.
18	866	41·8	41·1	0·7	0·0	0·0	0	— : 24 : —	8·0	Id. ; cymoid and woolly cirri ; cir. haze ;
19	873	42·2	41·7	0·5	0·1	0·0	20	— : 24 : —	9·0	Cirro-stratous scud ; cir.-cum. ; cir.-str. ; linear cirri.
20	879	46·7	45·4	1·3	0·0	0·0	12	— : 24 : —	8·5	Nearly as before ; sky in patches. ⊖

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
12	21	29·882	51·4	49·2	2·2	0·1	0·1	24	— : 24 : —	9·5	Nearly as before.
	22	892	55·1	51·7	3·4	0·1	0·1	20	— : 24 : —	9·5	Id.; patches of scud on horizon. ⊖
	23	879	56·1	51·2	4·9	0·1	0·1	24	24 : — : —	9·2	Scud, cum., woolly cir.-cum., cymoid cir., cir.-str., cir. ●
13	0	883	56·7	51·0	5·7	0·1	0·1	23	24 : — : —	8·8	Nearly as before. ⊖
	1	879	59·1	53·0	6·1	0·1	0·1	4	23 : — : —	9·0	Thick smoky scud; cumuli, cirro-strati, cirri.
	2	874	60·8	54·1	6·7	0·1	0·0	12	23 : 24 : 24	9·8	Scud, cumuli, cumulo-strati, cirro-strati, cirrous haze. ●
	3	861	62·0	53·8	8·2	0·2	0·1	20	15 : 24 : —	9·5	Nearly as last; solar halo. ⊖
	4	859	60·4	53·0	7·4	0·2	0·0	2		10·0	Haze much thicker.
	5	848	56·8	52·1	4·7	0·2	0·2	4	— : — : 23	9·8	Woolly cirri, cirrous haze; scud, cumuli, &c. ⊖
	6	843	54·4	51·2	3·2	0·3	0·3	4	— : 23 : —	10·0	Scud near horizon; dense cirro-strati and haze.
	7	839	52·4	49·7	2·7	0·3	0·2	4	— : 23 : —	10·0	As last hour.
	8	842	51·5	49·3	2·2	0·2	0·0			10·0	Scud; dense cirrous haze.
	9	845	51·3	49·8	1·5	0·1	0·0			10·0	Dark; rain^{1}
	10	840	50·6	49·9	0·7	0·0	0·0			10·0	Id.; rain^{2}
	11	843	50·1	49·9	0·2	0·1	0·1			10·0	Id.; rain^{3}
	12	834	51·0	50·7	0·3	0·1	0·1			10·0	Id.; rain$^{1·5}$
	13	29·828	51·0	50·4	0·6	0·3	0·3	4		10·0	Dark; rain^{2}
	14	819	50·5	49·4	1·1	0·5	0·3	6		10·0	Id.; rain$^{1·5}$
	15	811	50·0	49·2	0·8	0·6	0·5	5		10·0	Id.; id.
	16	796	49·5	49·0	0·5	0·5	0·3	4		10·0	Id.: rain$^{1·0}$
	17	777	49·5	49·0	0·5	0·7	0·6	6		10·0	Id.; id.
	18	778	49·5	48·6	0·9	0·9	0·8	6	6 : — : —	10·0	Scud moving rapidly; rain^{2}
	19	780	49·7	48·8	0·9	1·1	0·5	6	7 : — : —	10·0	Scud; dense mass of cirro-strati; rain$^{1·5}$
	20	780	50·0	49·1	0·9	1·4	0·7	6	7 : — : —	10·0	Id.: rain^{2}
	21	769	50·9	50·0	0·9	1·5	1·7	5	7 : — : —	10·0	Id.; rain$^{1·5}$
	22	769	50·3	49·6	0·7	1·7	1·2	6	7 : — : —	10·0	Id.; rain^{2}
	23	758	50·4	50·0	0·4	1·4	0·7	8	7 : — : —	10·0	Id.; rain^{3}
14	0	736	51·7	51·3	0·4	0·6	0·5	5	7 : — : —	10·0	Id.; rain$^{0·5}$
	1	727	53·3	52·8	0·5	0·6	0·4	4	7 : — : —	10·0	Id.; rain^{1}
	2	708	55·0	54·3	0·7	0·4	0·4	4	7 : — : —	10·0	Id.; id.
	3	700	54·9	54·0	0·9	0·5	0·4	5	8 : — : —	10·0	Id.; rain^{2}
	4	691	54·7	54·0	0·7	0·5	0·1	4	8 : — : —	10·0	Id.; id.
	5	676	55·0	54·3	0·7	0·4	0·3	4	8 : — : —	10·0	Id.; id.
	6	665	54·9	54·3	0·6	0·4	0·3	4	8 : — : —	10·0	Id.; rain^{1}
	7	662	54·9	54·3	0·6	0·3	0·2	4		10·0	Id.; rain^{2}
	8	669	54·7	54·2	0·5	0·2	0·2	4		10·0	Id.; rain^{1}
	9	667	54·8	54·3	0·5	0·2	0·2	4		10·0	Dark; rain$^{0·5}$
	10	667	54·9	54·5	0·4	0·2	0·2	4		10·0	Id.; id.
	11	657	55·0	54·7	0·3	0·1	0·0	4		10·0	Id.; id.
	12	643	54·9	54·7	0·2	0·1	0·0	4		10·0	Id.; fair.
	23	29·430	58·3	57·7	0·6	0·2	0·1	5	8 : — : —	10·0	Sunday—Continuous rain till 2h.
15	4	29·357	61·6	59·6	2·0	0·2	0·1	24	26 : — : —	9·8	Scud; cirri above.
	13	29·377	57·9	56·5	1·4	0·7	0·3	21		9·5	Scud.
	14	379	57·2	55·2	2·0	0·6	0·3	20		1·0	Scud near horizon.
	15	373	56·4	54·6	1·8	0·5	0·3	21		1·0	Thin clouds.
	16	375	55·6	53·7	1·9	0·6	0·4	24		0·7	Id.
	17	379	54·7	52·7	2·0	0·7	0·4	22		2·5	Scud; cirro-strati.
	18	379	55·5	52·8	2·7	1·5	0·9	21	25 : — : —	3·0	Id.; id.
	19	401	54·3	52·1	2·2	1·0	0·4	20	23 : — : —	4·5	Id.; id. ⊙
	20	407	56·8	54·9	1·9	1·4	0·8	20	24 : — : —	8·0	Id.; id. ⊖
	21	408	58·4	55·0	3·4	1·6	1·1	20	24 : — : —	8·0	Id.; id. ⊖
	22	429	59·9	56·1	3·8	1·8	0·8	21	24 : 26 : —	9·0	Id.; cirro-cumulo-strati; cirro-strati.
	23	424	60·9	56·8	4·1	1·4	1·0	21	24 : — : —	8·5	Id.; id.; id. ⦶
16	0	433	64·2	58·8	5·4	1·4	1·2	21	24 : — : —	6·0	Id.; loose cumuli; cirro-strati. ⦶
	1	438	63·5	57·6	5·9	1·5	1·5	22	24 : — : —	7·0	Id.; id. ⊖

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Sept. 14d 23h. Observation made at 23h 30m.

Sept. 15d 4h. Observation made at 4h 40m.

Gött. Mean Time.	Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
16 2	29·446	63·0	57·0	6·0	1·3	0·8	22	26 : — : —	3·0	Loose cumuli ; cirro-strati. ⦶
3	458	61·3	57·1	4·2	1·5	0·6	24	24 : 25 : —	5·0	Scud ; loose cumuli ; cirro-strati. ⊖
4	463	64·0	58·0	6·0	0·6	0·7	22	25 : 26 : —	7·0	Id. ; id. ; id. ⊖
5	470	62·0	56·8	5·2	0·7	0·6	23	— : 25 : —	3·5	Cirro-stratous scud ; loose cumuli ; cirro-strati. ⊖
6	467	59·8	55·3	4·5	0·7	0·5	22	— : — : 26	1·5	Scud ; loose cumuli ; cirro-strati ; cirri. ⊙
7	480	58·3	54·3	4·0	0·5	0·4	20	24 : — : —	0·8	Id. ; cirro-strati and cirri.
8	486	57·1	53·1	4·0	0·6	0·4	23	26 : 26 : —	0·6	Id. ; cirro-strati ; cirri.
9	497	54·2	51·8	2·4	0·3	0·2	24		0·3	Id.
10	498	52·0	50·3	1·7	0·2	0·1			0·2	Id.
11	509	50·2	49·5	0·7	0·1	0·1			0·3	Id.
12	514	49·9	48·9	1·0	0·1	0·1			1·5	Id. ; cirro-strati.
13	29·517	49·7	48·7	1·0	0·1	0·1			7·5	Scud.
14	514	49·1	48·6	0·5	0·0	0·0			5·0	Id. ; stars dim.
15	507	49·0	48·3	0·7	0·0	0·0			7·0	Id. ; clouds broken.
16	509	48·0	47·7	0·3	0·0	0·0			6·0	Id.
17	503	47·7	47·4	0·3	0·0	0·0	18		9·5	Id.
18	510	47·8	47·4	0·4	0·1	0·0	25	— : 24 : —	10·0	Cirro-stratous scud ; cirro-strati ; heavy dew.
19	523	48·7	48·0	0·7	0·0	0·0	6		10·0	Dense cirro-stratous scud ; loose scud on E. horizon.
20	533	50·3	49·4	0·9	0·0	0·0	6		10·0	Dense homogeneous cirro-strati.
21	544	51·3	50·9	0·4	0·3	0·3	4		10·0	Scotch mist ; rain$^{0\cdot5}$
22	559	51·7	51·2	0·5	0·3	0·2	6	6 : — : —	10·0	Id. ; scud ; rain$^{0\cdot5}$
23	567	52·6	51·7	0·9	0·3	0·4	2	6 : — : —	10·0	Id.
17 0	572	52·0	51·3	0·7	0·5	0·4	4	4 : — : —	10·0	Id.
1	586	51·9	51·0	0·9	0·8	0·8	4	4 : — : —	10·0	Id.
2	593	52·0	50·0	2·0	0·8	0·4	3	4 : — : —	10·0	Scud ; dense homogeneous cirro-strati.
3	598	51·6	50·3	1·3	0·5	0·6	4	4 : — : —	10·0	Id. ; Scotch mist ; rain$^{0\cdot5}$
4	605	51·8	51·2	0·6	0·6	0·5	4		10·0	Id. ; rain^{2}
5	618	51·9	51·0	0·9	0·5	0·3	4	4 : — : —	10·0	Id. ; rain^{1}
6	637	52·0	51·3	0·7	0·4	0·3	4	4 : — : —	10·0	Id. ; id.
7	649	51·7	51·2	0·5	0·3	0·2	4	4 : — : —	10·0	Id. ; rain$^{0\cdot5}$
8	667	51·5	50·9	0·6	0·5	0·3	3		10·0	Id. ; id.
9	690	51·0	50·5	0·5	0·5	0·3	3		10·0	Id. ; Scotch mist ; rain$^{0\cdot3}$
10	699	50·5	50·0	0·5	0·5	0·4	4		10·0	Rain$^{0\cdot3}$
11	718	50·2	49·0	1·2	0·8	0·3	3		10·0	Scud ?
12	730	50·0	48·7	1·3	0·4	0·2	3		10·0	Clouds a little broken.
13	29·743	49·0	47·7	1·3	0·3	0·2			3·0	Cirro-strati ?
14	752	46·0	45·0	1·0	0·2	0·1			1·8	Id.
15	759	45·0	44·2	0·8	0·1	0·0			1·5	Id.
16	765	44·1	43·8	0·3	0·0	0·0			5·0	Cirro-strati ; cirri ; corona round Jupiter and Venus.
17	774	42·0	41·7	0·3	0·0	0·0	20	— : 4 : —	3·0	Cirro-stratous scud ?
18	789	40·1	40·0	0·1	0·0	0·0	20	— : 0 : —	1·5	Id. ? mist on the ground.
19	814	43·7	43·2	†0·5	0·1	0·0	15	— : 1 : —	7·0	Cirro-cumulo-strati ; scud ; loose cumuli on E. hor. ●
20	831	45·8	45·4	‡0·4	0·1	0·1	17	— : 2 : —	8·0	Id. ; cumuli ; cirro-strati ; rain$^{0\cdot5}$
21	844	49·0	45·9	3·1	0·9	0·4	4	4 : 6 : —	7·5	Scud ; loose cumuli ; cirro-cumulous scud.
22	856	50·0	45·9	4·1	0·6	0·3	2	4 : — : —	8·0	Id. ; cumuli to W. ⊖
23	873	50·8	48·4	2·4	0·4	0·8	2	3 : 4 : —	8·0	Id. ; cir.-cum. scud ; cumuli, cir.-strati, showers. ⊖
18 0	875	50·0	46·3	3·7	1·2	0·7	3	3 : 4 : —	8·5	Id. ; id. ; id. ⊖
1	889	50·6	45·6	5·0	1·1	0·5	4	3 : — : —	10·0	Id. ; id.
2	884	51·2	46·0	5·2	1·0	0·6	5	2 : — : —	9·9	Id.
3	890	51·8	45·5	6·3	0·7	0·7	4	— : 2 : —	9·0	Cirro-cumulous scud ; cirro-cumuli ; loose cumuli. ●
4	889	51·0	45·0	6·0	0·5	0·8	4	— : 2 : —	9·0	Id. ⊖
5	901	49·7	44·8	4·9	0·6	0·7	2	— : 2 : —	9·9	Id.
6	915	47·7	44·0	3·7	0·5	0·1	3	— : 3 : —	9·9	Id.
7	920	47·8	44·0	3·8	0·2	0·0	1	4 : — : —	9·9	Scud ; cirro-cumulous scud. ♃
8	928	47·5	44·0	3·5	0·2	0·0	2		10·0	Scud.
9	934	46·8	44·2	2·6	0·1	0·0			10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Sept. 17d 4h. Observation made at 4h 7m.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
18 10	29·932	46·7	43·9	2·8	0·1	0·0			10·0	Scud.
11	933	47·2	44·2	3·0	0·0	0·0			10·0	Id.
12	934	47·4	44·0	3·4	0·0	0·0			10·0	Id.
13	29·933	46·2	43·9	2·3	0·1	0·0			10·0	Scud.
14	926	47·0	44·0	3·0	0·1	0·0			10·0	Id.
15	923	46·9	44·0	2·9	0·0	0·0			10·0	Id.
16	923	46·6	44·2	2·4	0·0	0·0			10·0	Id.
17	917	46·0	44·1	1·9	0·0	0·0	22		9·5	Id.
18	918	46·3	44·7	1·6	0·1	0·0	7		9·5	Id.
19	927	46·8	45·0	1·8	0·0	0·0	4	4 : 8 : —	9·8	Id.; cirro-stratous scud.
20	935	48·0	47·0	1·0	0·2	0·1	4	4 : 8 : —	9·8	Misty scud; cirro-stratous scud; cirro-cumulo-strati.
21	933	49·3	47·9	1·4	0·0	0·0	3	4 : 8 : —	10·0	As before; rain$^{0·2}$
22	935	51·7	49·3	2·4	0·1	0.1	4	4 : 8 : —	10·0	Id.; id.
23	932	52·6	50·6	2·0	0·2	0·2	4	4 : 9 : —	9·8	Thin scud; cirro-cumulo-strati. ⊖
19 0	919	54·3	52·7	1·6	0·3	0·3	4	10 : — : —	9·5	Smoky scud; id.; heavy drops of rain. ⊖
1	919	54·9	50·0	4·9	0·5	0·4	6	10 : — : —	9·0	Id.; rain^1
2	920	52·6	49·8	2·8	1·2	0·8	5	— : 8 : —	9·0	Cirro-cumulous scud. ⊖
3	918	55·4	50·0	5·4	0·7	0·6	7	7 : 8 : —	8·5	Thin scud; cirro-cumulous scud. ⊙
4	916	54·0	50·0	4·0	1·3	0·5	6	6 : — : —	6·5	Smoky scud; cirro-cumulo-strati; cumuli; nimbi. ⊙
5	919	51·4	47·9	†3·5	1·1	0·2	6	6 : — : —	7·2	As before; rain$^{0·2}$
6	920	49·7	46·4	↓3·3	0·3	0·2	4	6 : — : —	1·5	Scud; cirro-cumulo-strati; cumuli. ⦶
7	925	47·3	45·0	2·3	0·2	0·1	31	6 : — : —	2·0	Id. ☽
8	932	47·6	45·7	1·9	0·1	0·1			8·5	Id.; shower^2
9	941	47·0	46·0	1·0	0·3	0·1	6		2·0	Id.; cirro-cumulous scud; sky very clear. ☽
10	940	46·6	45·6	1·0	0·0	0·0	8		4·0 v.	Id.
11	949	47·0	45·8	1·2	0·1	0·1	4		4·0	Id.
12	959	45·8	44·5	1·3	0·1	0·1	3		9·0	Id.; clouds broken; sky to N.
13	29·960	47·0	45·7	1·3	0·1	0·1	3		10·0	Scud; rain^1
14	962	47·2	46·0	1·2	0·2	0·1			9·9	Id.; clouds broken.
15	957	46·8	46·0	0·8	0·2	0·1			5·0	Id.; id.
16	959	45·8	44·7	1·1	0·1	0·1	5		1·5	Clouds on horizon, very clear.
17	964	45·5	44·1	1·4	0·1	0·2	2		3·0	Id. to E.
18	977	46·3	45·0	1·3	0·2	0·2	2	— : 4 : —	7·0	Cirro-cumulous scud; cumuli, cirro-strati.
19	29·989	47·0	45·2	1·8	0·2	0·1	4	6 : — : —	8·0	Scud; cirro-cumulous scud; cirro-strati.
20	30·003	48·0	46·6	1·4	0·2	0·1	6	6 : — : —	9·5	Id.; cirro-strati; shower^1 at 19h 50m. ⊙
21	016	51·0	48·1	2·9	0·3	0·6	5	6 : — : —	5·0	Detached scud and loose cumuli; cir.-cum.-str. ⊙
22	019	52·4	48·3	4·1	1·2	0·9	5	6 : 7 : —	2·2	Loose cumuli; loose woolly cirro-cumuli. ⊙
23	021	53·6	48·2	5·4	1·3	0·9	5	6 : — : —	9·0	Scud; loose cumuli.
20 0	021	53·9	48·3	5·6	1·0	0·6	6	6 : — : —	8·0	Id.; id.
1	029	53·7	49·1	4·6	1·1	0·4	6	7 : — : —	9·9	Id.; id.; drops of rain.
2	030	53·3	48·8	4·5	1·5	0·8	4	7 : — : —	9·8	Id.; id.; cir.-cum. scud; drops of rain. ⊖
3	026	54·2	48·6	5·6	0·8	0·6	6	7 : — : —	9·7	Id.; id. ⦶
4	025	54·0	48·5	5·5	1·0	0·7	5	7 : — : —	8·0	Id.; id. ⊙
5	028	53·0	48·2	4·8	1·3	0·5	6	6 : — : —	8·0	Id.; id.; cir.-str.; rain to NW. ⊙
6	029	48·3	46·8	1·5	1·3	0·3	6	6 : — : —	9·0	Id.; id.; cirro-cumulo-strati; cirro-strati.
7	037	48·2	45·7	2·5	0·3	0·1			2·0	Id.; id.; cirrous scud; haze to E. ☽
8	053	44·6	43·3	1·3	0·1	0·1	4		1·5	Id.; id. ☽
9	050	41·3	40·4	0·9	0·0	0·0			0·5	Id.; sky very clear. ☽
10	057	39·7	39·2	0·5	0·0	0·0			4·5	Cirro-cumulo-strati. ☽
11	045	37·6	37·1	0·5	0·1	0·0	18		1·8	Scud; cirro-strati? ☽
12	050	37·6	37·1	0·5	0·1	0·0	18		0·8	Id.
13	30·054	36·0	35·7	0·3	0·0	0·0	20		0·8	Scud.
14	056	35·3	35·0	0·3	0·0	0·0	20		1·5	Cirro-stratous scud.
15	058	36·7	36·1	0·6	0·1	0·0	20		9·0	Id.
16	053	38·8	38·4	0·4	0·0	0·0			8·8	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1ʰ.	10ᵐ.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
20 17	30·059	36·6	36·3	0·3	0·0	0·0	20		1·8	Cirro-stratous scud.
18	066	35·0	34·8	0·2	0·0	0·0	20	20 : 6 : —	1·5	Strati; cirro-cumulous scud; cirro-stratous scud.
19	079	35·0	34·7	†0·3	0·1	0·0	21	— : 6 : —	3·5	Cirro-stratous scud; mist in valleys. ⦶
20	088	40·0	39·8	↓0·2	0·1	0·0	20	— : 5 : —	9·5	Cirro-cumulo-strati. ●
21	089	43·5	43·0	0·5	0·0	0·0	20	— : 6 : —	3·0	Id.
22	090	49·1	47·3	1·8	0·1	0·0	4	— : 6 : —	9·5	Id. ⊖
23	094	51·2	48·2	3·0	0·1	0·1	4	— : 8 : —	9·5	Id.
21 0	089	52·7	47·9	4·8	0·1	0·1	3	— : 9 : —	9·0	Cirro-cumulous scud; loose cumuli. ⦶
1	086	53·8	47·7	6·1	0·2	0·2	3	— : 11 : —	9·5	Id. ●
2	090	54·2	48·2	6·0	0·3	0·3	6	8 : — : —	9·9	Thick scud.
3	098	52·7	47·0	5·7	0·2	0·2	3		9·9	Id.
4	091	52·3	47·8	4·5	0·3	0·2	3	8 : — : —	9·9	Id.; greenish sky to NE.
5	081	52·0	47·4	4·6	0·2	0·2	5	4 : — : —	9·9	Id. ●
6	080	50·9	47·1	3·8	0·1	0·2	4	4 : — : —	9·5	Scud; cirro-stratous scud.
7	079	48·9	46·2	2·7	0·1	0·0	3	— : 4 : —	8·8	Cirro-cumulous scud; cirroûs haze to NE.
8	083	43·9	43·0	0·9	0·0	0·0	30		0·5	Id. ☽
9	078	39·3	39·1	0·2	0·0	0·0	18		0·0	Heavy dew. ☽
10	072	38·0	37·7	0·3	0·0	0·0	26		0·0	Id. ☽
11	080	35·1	34·9	0·2	0·0	0·0	20		0·0	Id. ☽
12	078	33·8	33·6	0·2	0·0	0·0	20		0·1	Slight mist on the ground; cirro-strati to NE. ☽
23	30·003	46·3	44·0	2·3	0·2	0·0	12		1·0	Detached cumuli round horizon.
22 13	29·926	38·2	37·8	0·4	0·2	0·1	18		9·9	Cirro-cumulous scud.
14	910	37·7	37·2	0·5	0·0	0·0	22		8·5	Id. ☽
15	840	36·0	35·8	0·2	0·0	0·0			3·0	Clouds round horizon; stars bright.
16	826	34·8	34·6	0·2	0·1	0·1			0·2	Id. on E. horizon.
17	814	33·5	33·3	0·2	0·1	0·1	21		2·0	Id. round horizon.
18	808	35·4	35·1	0·3	0·0	0·0	20	4 : — : —	9·9	Thick scud; heavy dew on the ground.
19	807	37·3	36·9	0·4	0·1	0·1	22	6 : — : —	9·9	Scud, moving slowly.
20	804	39·2	38·6	0·6	0·1	0·0	22	4 : — : —	9·9	Id.
21	801	41·1	40·4	0·7	0·1	0·1	22	4 : 4 : —	10·0	Scud; cirro-stratous scud; strati to E.
22	796	43·6	42·3	1·3	0·0	0·0	21	6 : 6 : —	10·0	Id.; id.
23	792	46·8	45·1	1·7	0·0	0·0	14	4 : 4 : —	10·0	Id.; id.
23 0	794	46·9	45·0	1·9	0·0	0·0			10·0	Id.; id.
1	792	51·0	48·3	2·7	0·0	0·0	12		10·0	Id.; id.
2	786	50·9	46·7	4·2	0·4	0·3	2	4 : 4 : —	10·0	Id.; id.
3	780	51·4	47·1	4·3	0·4	0·3	2		10·0	Id.; id.
4	776	50·8	47·2	3·6	0·3	0·3	2	4 : 4 : —	10·0	Id.; id.
5	779	49·3	47·3	2·0	0·3	0·2	2	4 : 4 : —	10·0	Id.; id.; drops of rain.
6	788	49·0	47·2	1·8	0·2	0·1	2	4 : 4 : —	10·0	Id.; id.; id.
7	794	48·9	47·1	1·8	0·2	0·1	31		10·0	Id.; drops of rain.
8	795	49·1	47·0	2·1	0·3	0·1	2		10·0	Id.; id.
9	806	48·8	47·0	1·8	0·3	0·1	1		10·0	Id.
10	804	48·9	46·9	2·0	0·2	0·2	0		10·0	Id.
11	807	49·2	47·0	2·2	0·1	0·1	0		10·0	Id.
12	811	48·7	46·9	1·8	0·1	0·0	0		10·0	Id.
13	29·812	48·3	46·5	1·8	0·0	0·0	0	— : 6 : —	9·9	Cirro-cumulous scud.
14	812	48·4	46·6	1·8	0·0	0·0	26		10·0	Id.
15	813	48·6	46·8	1·8	0·0	0·0	26		10·0	Id.
16	814	48·7	47·1	1·6	0·0	0·0			10·0	Id.
17	825	48·9	47·3	1·6	0·1	0·0	0		10·0	Very dark; drops of rain.
18	834	48·5	46·6	1·9	0·0	0·0	0		10·0	Cirro-stratous scud.
19	846	47·8	45·6	2·2	0·1	0·0	0		10·0	Id.; cirro-strati.
20	867	48·2	46·2	2·0	0·1	0·1	18 v.		9·8	Id.
21	871	50·0	47·6	2·4	0·0	0·0	24	— : 2 : —	9·5	Id.
22	885	52·8	48·0	4·8	0·1	0·1	26	— : 4 : —	7·5	Id. ⦶

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Sept. 20ᵈ 18ʰ. The clouds to E. were first tinged with red at 18ʰ 5ᵐ.

Sept. 23ᵈ 14ʰ. Observation made at 14ʰ 9ᵐ.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
23 23	29·886	55·2	49·3	5·9	0·1	0·2	31	— : 25 : —	8·5	Cirro-cumulous scud. ⊖
24 0	880	54·2	48·6	5·6	0·2	0·1	28	28 : 22 : —	4·5	Thin scud; loose cumuli. ⊙
1	882	56·8	50·0	6·8	0·2	0·1	26	25 : — : —	7·0	Loose cumuli. ⦶
2	881	56·5	50·0	6·5	0·2	0·1	23	25 : — : —	5·0	Id. ⊖
3	884	57·4	50·4	7·0	0·2	0·2	25		2·5	Cumuli, cumulo-strati, cirro-strati, round horizon. ⊙
4	880	56·8	50·8	6·0	0·2	0·0	24		1·5	Loose cumuli round horizon; hazy to N. ⊙
5	878	55·7	50·0	5·7	0·1	0·1	24	23 : — : —	2·0	Scud; loose cumuli; hazy round horizon. ⊖
6	898	52·5	48·4	4·1	0·1	0·0	20	— : 21 : —	2·5	Cirro-cumulo-strati; id. ⊙
7	904	48·6	45·9	2·7	0·1	0·0	21	— : 21 : —	8·5	Id.; id.
8	916	47·7	45·1	2·6	0·1	0·1	20	— : 20 : —	4·5	Id.; id. ☽
9	933	43·3	42·0	1·3	0·1	0·2	20		0·8	Id. ☽
10	943	41·0	40·5	0·5	0·1	0·0	16		0·5	Cirro-strati. ☽
11	944	38·0	37·5	0·5	0·0	0·0			0·3	Cirro-cumuli. ☽
12	946	36·4	36·0	0·4	0·0	0·0	16		0·2	Id. to SE.; mist on the ground. ☽
13	29·947	34·7	34·6	0·1	0·0	0·0			0·0	Slight mist on the ground; clear. ☽
14	943	34·9	34·5	0·4	0·0	0·0	24		0·0	Clear. ☽
15	944	34·0	33·7	0·3	0·0	0 0	20		0·0	Id. ☽
16	937	34·6	34·1	0·5	0·0	0·0	20		0·0	Id. ☽
17	940	34·2	34·0	0·2	0·0	0·0			0·1	Cirro-strati; much dew.
18	940	33·9	33·8	0·1	0·0	0·0	18		0·4	Cirro-cumuli; cirro-strati; cirrous haze; hoar-frost.
19	959	34·7	34·5	0·2	0·1	0·0	18	20 : 0 : —	7·5	Strati; cir.-cum.; cir.-str.; linear and mottled cirri. ⦶
20	964	38·8	38·7	0·1	0·1	0·0	16	24 : 0 : —	2·8	Scud; cir.-cum., &c. as before; thin strati. ⊙
21	963	47·5	46·9	0·6	0·1	0·1	18	— : 31 : —	8·0	Cirro-cumulo-strati; cirro-strati. ●
22	968	51·1	49·7	1·4	0·3	0·2	17	— : 31 : —	5·0	Id.; id.; scud on Cheviot. ⦶
23	964	55·2	50·6	4·6	0·3	0·4	24 v.	26 : 31 : —	9·0	Scud; cirro-cumulo-strati; sky milky. ●
25 0	962	56·8	51·6	5·2	0·5	0·5	23	26 : 31 : —	9·8	As before.
1	961	58·1	53·2	4·9	0·8	0·3	20	26 : 27 : —	9·0	Scud; cirro-cumulo-strati. ⦶
2	957	58·3	52·8	5·5	0·5	0·6	22	24 : 27 : 30	9·8	Cir.-str. scud; cir.-cum.-str.; mottled and linear cirri.
3	954	58·2	53·0	5·2	0·4	0·3	24 v.	24 : 24 : —	9·9	Scud; cirro-stratous scud; cirrous haze.
4	950	58·0	53·0	5·0	0·4	0·3	21	24 : 24 : —	10·0	Thick scud and cirro-stratous scud.
5	949	57·0	52·1	4·9	1·1	0·3	23	24 : 24 : —	10·0	Id.
6	955	55·9	51·8	4·1	1·0	0·3	22	24 : 24 : —	10·0	Id.
7	963	54·7	51·1	3·6	0·3	0·1	24	25 : — : —	10·0	Id.
8	963	53·5	50·7	2·8	0·2	0·2	20		10·0	Thick scud; occasional breaks.)
9	964	52·9	50·4	2·5	0·2	0·0	16		10·0	Id.
10	960	52·6	50·4	2·2	0·2	0·1	20	24 : — : —	9·9	Id.
11	962	52·9	50·8	2·1	0·2	0·2	20		10·0	Id.
12	950	52·5	50·8	1·7	0·3	0·3	20	24 : — : —	7·5	Id. ☽
13	29·940	52·9	50·9	2·0	0·4	0·3	20	24 : — : —	10·0	Thick scud.
14	938	52·3	50·4	1·9	0·3	0·3	20	24 : — : —	9·0	Scud passing rapidly. ☽
15	928	53·3	51·2	2·1	1·2	0·4	20		9·5	Scud.
16	924	53·2	51·0	2·2	0·5	0·4	19	24 : — : —	9·5	Thick scud; cirro-strati.)
17	920	53·1	50·9	2·2	0·5	0·3	20		10·0	Id.
18	918	53·2	51·1	2·1	0·4	0·6	19	24 : — : —	10·0	Id.; cirro-strati.
19	919	53·5	51·6	1·9	1·2	1·0	19	24 : — : —	9·9	Thick scud and cirro-stratous scud.
20	922	54·2	52·2	2·0	1·0	1·1	19	24 : — : —	9·8	Scud; cirro-strati and cirri.
21	924	55·7	53·0	2·7	1·0	0·8	19	24 : — : —	9·8	Id.
22	919	56·9	54·0	2·9	1·5	0·7	18	24 : — : —	9·5	Id.; cirro-strati and cirri.
23	915	58·9	55·3	3·6	1·7	1·6	19	24 : — : —	8·7	Id.; cirro-strati; thin cirri. ⊙
26 0	913	60·8	56·7	4·1	1·4	1·1	18	24 : — : —	9·6	As before.
1	911	61·0	56·6	4·4	1·3	1·0	20	24 : — : —	9·8	Scud; cirro-strati, cirro-cumuli, and cirri.
2	906	59·7	55·7	4·0	1·3	0·5	21	24 : — : —	9·8	Id.; id., cirro-cumulo-strati, cirri.
3	896	61·1	56·0	5·1	0·9	0·8	19	23 : — : —	9·7	Id.; id.
4	887	60·1	55·1	5·0	1·4	0·9	20	23 : — : —	9·5	Id.; id.
5	873	59·0	55·0	4·0	1·1	0·7	20	23 : — : —	9·6	Id.; id.
6	887	58·0	54·3	3·7	0·7	0·9	20	24 : — : —	10·0	Id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Sept. 24d 19h. Strati in the hollows; cirro-cumulo-strati; cirro-strati; woolly and mottled cirri; scud on Cheviot; wisps of cirri lying vertically *among* the cirro-stratus to NW.; hoar-frost. 20h. Smoky scud moving quickly, cirro-cumuli slowly.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
26 7	29·887	58·2	54·2	4·0	0·7	0·4	20	24 : — : —	10·0	Scud ; cirro-strati.
8	889	56·6	54·3	2·3	0·4	0·4	20		10·0	Id. ; id.
9	891	55·9	54·1	1·8	0·6	0·5	18		10·0	Id. ; id.
10	891	56·1	54·0	2·1	0·8	0·7	18	24 : — : —	9·8	Thick scud.
11	877	55·8	53·6	2·2	0·8	0·4	18	— : 24 : —	8·8	Cirro-stratous scud. ☽
12	869	54·8	53·1	1·7	0·8	2·1	18	21 : 25 : —	2·5	Scud ; cirro-strati. ☽
13	29·864	53·9	52·6	1·3	1·7	1·0	18	— : 25 : —	2·0	Woolly cirro-strati dissolving at the meridian. ☽
14	856	53·0	52·0	1·0	1·6	0·9	18	— : 25 : —	1·0	Id. id. * ☽
15	853	53·2	52·0	1·2	1·0	0·7	18	— : 25 : —	1·5	Id. dissolving 10° E. of meridian. ☽
16	848	53·1	51·8	1·3	0·4	0·4	18	— : 25 : —	1·0	Id. dissolving. ☽
17	848	51·1	50·3	0·8	0·3	0·2	4 v.	— : 26 : —	9·0	Cirro-strati flowing like a semifluid.
18	827	54·3	52·5	1·8	1·1	0·8	18	— : 24 : —	4·0	Cirro-stratous scud ; cirrous haze to NW.
19	837	55·0	52·0	3·0	1·2	1·1	17	24 : — : —	2·5	Scud ; woolly cirri to NE. ; cirro-strati. ⊙
20	837	56·5	53·4	3·1	0·8	1·1	21	24 : — : —	8·0	Id. ; id.
21	828	57·4	54·0	3·4	1·7	0·9	19	24 : — : —	7·0	Loose scud ; cirro-strati ; cirri.
22	844	61·5	57·2	4·3	1·0	1·3	19	24 : — : —	7·5	Id. ; id. ⊙
23	836	61·3	57·2	4·1	1·4	1·5	19	24 : — : —	4·5	Id. ; id. ; loose cumuli. ⊖
27 0	834	63·7	59·0	4·7	1·2	1·1	20	24 : — : —	5·5	Loose scud moving rapidly ; cirri, cirro-strati. ⊙
1	822	63·5	59·4	4·1	1·0	0·5	20	24 : — : —	3·5	Loose scud ; scud on Cheviot ; id. ⊙
2	820	63·2	59·4	3·8	0·8	0·9	20	24 : — : —	9·5	Thick scud ; cirri ; cirro-strati. ●
3	810	63·2	59·0	4·2	1·3	0·9	21	23 : — : —	8·5	Scud ; loose cumuli ; id. ●
4	797	62·2	58·8	3·4	1·5	1·0	22	22 : 24 : —	8·5	Loose scud ; loose cumuli ; cum., cum.-str., cir.-str. ●
5	797	61·0	57·8	3·2	1·1	0·7	21	23 : — : —	9·9	Thick scud ; haze to N.
6	795	58·7	57·4	1·3	0·9	0·7	20	21 : 23 : —	10·0	Misty scud ; scud ; cirri ; fine rain$^{0·7}$
7	791	57·9	56·4	1·5	0·8	0·4	21	23 : — : —	9·5	Scud ; cirro-stratous scud ; woolly cirro-cumuli.
8	788	57·8	56·3	1·5	0·6	0·3	20	23 : — : —	9·5	Nearly as before. ☽
9	779	57·6	56·1	1·5	0·4	0·4	20	— : 22 : —	7·5	Cirro-cumulo-strati. ☽
10	772	57·1	55·8	1·3	0·5	0·4	20	22 : 23 : —	8·5	Misty scud ; cirro-cumulo-strati. ☽
11	760	55·5	54·6	0·9	0·4	0·4	24	21 : — : —	2·0	Loose scud ; cirro-strati on horizon. ☽
12	753	56·2	55·0	1·2	0·3	0·3	23	24 : — : —	7·5	Scud. ☽
13	29·745	56·9	55·4	1·5	0·9	0·5	19	— : 22 : —	9·0	Cirro-cumulous scud. ☽
14	741	56·9	55·3	1·6	0·5	0·4	19	— : 22 : —	9·9	Id.
15	721	56·7	55·2	1·5	0·4	0·4	20		10·0	Id., more homogeneous.
16	708	56·3	54·8	1·5	0·5	0·2	20		10·0	Id.
17	701	56·0	54·4	1·6	0·4	0·1	23		10·0	Thick scud and cirro-stratous scud.
18	680	55·9	54·0	1·9	1·0	0·7	18	21 : 21 : —	9·9	Scud ; cirro-stratous scud.
19	687	55·9	54·0	1·9	0·6	0·3	18	22 : — : —	9·5	Watery and cirro-stratous scud ; cirro-strati ; cirri.
20	679	56·0	53·9	2·1	1·1	0·5	19	22 : — : —	9·9	Nearly as before.
21	682	57·0	54·4	2·6	0·8	0·6	19	22 : — : —	10·0	Id.
22	689	59·5	55·8	3·7	0·7	1·1	19	21 : 23 : —	10·0	Loose scud ; watery scud ; cirro-strati.
23	665	58·7	55·2	3·5	1·1	1·1	20	22 : 23 : —	10·0	Id. ; id. ; id.
28 0	662	59·3	55·8	3·5	1·1	0·4	20	24 : 24 : —	9·9	Loose and cir.-str. scud ; cir.-str. ; cir. haze ; sky green.
1	652	59·0	54·4	4·6	0·6	0·8	20	24 : — : —	10·0	Loose scud ; homogeneous mass.
2	646	58·4	54·0	4·4	1·2	0·8	20	24 : — : —	10·0	Id. ; homogeneous cirrous mass ; drops of rain.
3	626	58·3	54·9	3·4	1·5	0·8	20		10·0	Patches of scud ; homogeneous cirrous mass ; rain$^{0·5}$ at
4	630	57·7	54·1	3·6	1·2	0·4	20	22 : — : —	10·0	Id. ; id. [2h 30m.
5	629	56·9	54·3	2·6	1·0	0·8	20	22 : — : —	10·0	As before ; rain^{1}
6	661	50·0	49·2	0·8	1·6	1·2	4	2 : 27 : —	10·0	Scud ; rain^{2} ; stormy looking.
7	704	48·6	47·9	0·7	1·0	0·7	2	3 : — : —	10·0	Id. ; rain^{1}
8	741	47·8	46·9	0·9	1·0	0·4	2		10·0	Id. ; id.
9	770	47·7	46·2	1·5	0·9	0·3	3		10·0	Id.
10	779	47·3	46·0	1·3	0·2	0·0	31	— : 30 : —	9·0	Cirro-stratous scud ; cumuli to NE.
11	799	45·5	44·2	1·3	0·2	0·2	31		1·0	Id. ☽
12	819	44·0	42·5	1·5	0·3	0·3	31		0·5	Cumuli ; cirro-strati on E. horizon. ☽
23	29·967	48·6	43·7	4·9	0·5	0·2	22		......	Sunday—Forenoon, clear ; afternoon, overcast, scud and cumuli.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

* See additional meteorological notes after the *Hourly Meteorological Observations.*

Sept. 28d 6h. Two currents of thick watery scud ; the lower from NNE., newly sprung up ; the upper from NW by W. There seems to be little difference in the heights of the currents, or of the kinds of scud : they probably become the same current in a short time.

Gött. Mean Time.	Barometer at 32°.	Thermometers.			Wind.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
		Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29 13	30·078	37·3	37·0	0·3	0·7	0·0			0·0	Clear. ☽
14	083	36·6	35·9	0·7	0·0	0·0			0·5	Cirri and cirro-strati to W. ☽
15	074	35·9	35·7	0·2	0·0	0·0	22		1·0	Cirro-cumuli; cirri; cirro-strati. ☽
16	062	34·1	33·9	0·2	0·0	0·0	20	— : 28 : —	6·0	As before; lunar corona. ☽
17	055	37·1	36·8	0·3	0·0	0·0	22		10·0	Homogeneous cirro-strati.
18	054	38·0	37·6	0·4	0·0	0·0	22	— : 28 : —	9·9	Cirro-stratous scud; clouds tinged with red to E.
19	054	38·8	37·4	1·4	0·1	0·0	20	— : 28 : —	10·0	Id.; id.; cirri to E.
20	050	41·9	41·0	0·9	0·1	0·0	22	— : 28 : —	9·0	Cirro-cumuli; cirro-strati; haze. ⊖
21	045	46·8	44·9	1·9	0·1	0·1	16 v.	— : 28 : —	9·9	Cirro-cumulo-strati; cirro-strati; cirrous haze. ⊖
22	022	48·8	46·1	2·7	0·3	0·2	22	— : 28 : —	9·9	Id.; id.; id.
23	30·001	50·9	47·4	3·5	0·6	0·2	22	— : 28 : —	9·5	Id.; cirri; cirro-strati; cir. haze. ⊖
30 0	29·985	54·0	50·5	3·5	1·1	0·6	21	21 : — : 28	7·5	Scud; loose cumuli; cirri; cirro-strati; cumuli. ⊖
1	950	57·0	51·3	5·7	1·9	1·1	17 v.	20 : — : —	9·0	Id.; cirri; cirro-strati. ⊖
2	920	56·9	50·0	6·9	2·6	2·5	20	20 : — : 28	8·5	Id.; id.
3	885	56·2	50·2	6·0	2·8	2·2	20	20 : — : —	9·0	Id.; id.; cirro-strati; cirrous haze. ⊖
4	862	55·9	50·3	5·6	2·3	2·6	20		9·8	Pat. of scud; cir., cir.-str., cir. haze; cum. on E. hor.; faint solar
5	839	54·9	49·0	5·9	2·5	0·5	22	20 : — : 24	9·5	Thin scud; cirri; cirro-strati. ⊖ [halo. ●
6	809	54·2	49·7	4·5	2·0	2·2	20	20 : 22 : —	9·0	Scud; large loose cirro-cumuli; cirri.
7	793	54·0	50·6	3·4	2·7	2·5	20	20 : 22 : —	10·0	Id.; cirro-strati and cirro-cumuli.
8	771	54·7	51·0	3·7	2·7	1·6	22		9·8	Id.; cirro-strati.
9	752	54·9	51·1	3·8	2·5	1·5	20		9·8	Id.; id.
10	716	54·7	51·1	3·6	3·2	1·9	20		9·8	Id.; id.; cirro-cumulous scud.
11	701	53·9	51·0	2·9	3·1	2·1	20	22 : — : —	10·0	Id.; ☽
12	664	53·2	50·8	2·4	3·8	3·0	20		5·0	Id.; wind in gusts. ☽
13	29·641	53·7	51·2	2·5	3·1	2·0	20		10·0	Homogeneous mass.
14	639	54·3	51·8	2·5	3·3	2·1	20		10·0	Id.; drops of rain.
15	630	53·1	52·0	1·1	2·2	1·6	20		10·0	Id.; very light rain.
16	622	53·3	52·2	1·1	1·6	1·2	21		10·0	Id.; id.
17	603	53·0	52·2	0·8	1·3	1·0	20		10·0	Id.; $rain^{1·5}$
18	608	53·2	52·8	0·4	1·0	0·3	20		10·0	Scud.
19	622	52·9	50·9	2·0	0·4	0·4	21	— : 22 : —	7·0	Cirro-stratous scud; patches of loose scud.
20	626	51·8	49·1	2·7	0·8	0·6	22		1·0	Loose scud and cirro-strati near horizon. ⊙
21	629	52·7	49·6	3·1	0·6	0·3	22	25 : — : —	1·2	As before. ⊙
22	632	55·1	49·3	5·8	0·9	1·4	24	24 : — : —	3·0	Scud; loose cumuli; cirri; cirro-strati. ⊙
23	628	56·3	49·6	6·7	3·1	1·6	25	24 : — : 24	8·5	Id.; thick woolly cirri and cirro-strati. ⦶
1 0	640	56·9	49·2	7·7	1·7	1·6	25	24 : 24 : —	9·8	Id.; cirro-strati and cirrous haze. ●
1	625	56·1	49·0	7·1	1·9	0·6	22	24 : 24 : —	10·0	As before.
2	602	55·9	49·1	6·8	2·1	0·9	22	24 : 24 : —	9·8	Scud; dense cirro-strati and haze.
3	617	55·7	50·3	5·4	1·6	1·6	22	24 : — : —	10·0	Id.
4	599	54·4	49·2	5·2	1·8	1·0	21	24 : — : —	10·0	Id.
5	593	53·9	49·7	4·2	1·7	0·6	21	24 : — : —	10·0	Id.
6	595	52·5	49·2	3·3	0·9	0·5	20 v.	23 : — : —	9·9	Id.; dense cirro-strati and haze.
7	572	52·1	48·3	3·8	0·9	0·4	21		10·0	Id.; id.
8	562	49·9	48·7	1·2	0·6	0·4	20		10·0	Dense clouds; $rain^{0·5}$ at $7^h\ 30^m$.
9	535	50·0	48·8	1·2	0·5	0·4	20		10·0	Id.; drops of rain.
10	496	50·3	48·6	1·7	0·8	0·9	20	— : 22 : —	5·0	Cirro-cumulo-strati. ☽
11	462	51·3	48·9	2·4	1·4	2·1	20	22 : — : —	10·0	Scud?
12	432	50·9	48·7	2·2	1·3	0·5	20		9·9	Scud and cirrous clouds.
13	29·353	50·1	47·8	2·3	2·0	2·6	20	— : 24 : —	9·0	Cirro-cumulo-strati; cirro-strati; cirrous haze. ☽
14	332	51·2	48·7	2·5	2·0	1·1	19		10·0	Scud; cirro-cumulo-strati?
15	251	49·3	47·9	1·4	2·7	1·5	20	24 : 24 : —	8·8	Id.; homogen. cir.-str.; cir. haze; $rain^1$ since 14^h. ☽
16	174	49·7	48·0	1·7	2·7	2·5	20	24 : — : —	9·0	Id.; cirrous haze; $rain^1$ ☽
17	107	50·9	49·2	1·7	3·5	2·9	19	22 : — : —	10·0	Id.; cirrous clouds; $rain^{0·2}$ ☽
18	058	51·3	50·0	1·3	2·6	2·8	20	20 : — : —	10·0	Id.; id.; id. ☽
19	011	52·3	51·0	1·3	2·5	1·2	20	23 : — : —	10·0	Id.
20	011	54·0	50·3	3·7	4·2	1·5	20		1·5	Id.; cirro-strati on S. horizon. ⊖

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.	
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From				
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.		
1	21	29·004	55·1	50·6	4·5	3·3	2·5	22	24 : — : —	2·0	Scud; cirro-strati near horizon.	⊖
	22	29·019	56·8	51·2	5·6	2·7	2·4	22	25 : — : —	6·5	Id.; loose cumuli; cirro-strati.	●
	23	28·990	56·7	51·7	5·0	4·2	3·6	22	26 : — : —	6·5	Id.; cirro-strati.	⊙
2	0	28·987	57·2	52·5	4·7	5·6	2·7	25	26 : — : —	9·0	Id.; id.	●
	1	29·008	58·2	53·0	5·2	6·0	4·2	26	26 : — : —	3·5	Id.; loose cumuli.	⊙
	2	045	58·1	51·6	6·5	6·0	6·0	26		1·0	Scud on horizon.	⊙
	3	095	57·7	50·6	7·1	6·8	6·0	26		0·5	Id.	⊙
	4	122	56·7	50·0	6·7	3·9	5·6	28		0·5	Loose scud; loose cumuli; cumuli; cirro-strati.	⊙
	5	201	55·4	49·2	6·2	5·2	2·4	26		1·0	Id.; id.; cirro-strati; cirri.	⊙
	6	238	53·2	47·4	5·8	3·6	4·0	26 v.	— : 27 : —	1·2	Cir.-str. scud; cir.-str.; cirri on horizon; hazy.	⊖
	7	285	51·8	47·0	4·8	4·3	1·9	26		1·8	As before.	
	8	311	51·4	46·8	4·6	2·1	2·8	26		0·5	Cirri; belt of aurora, altitude 4°.	
	9	368	51·0	47·3	3·7	1·7	0·8	26		1·5	Cirri; cirro-strati; belt of aurora, altitude 5°.	
	10	369	51·3	47·7	3·6	1·5	0·6	26		1·5	Id.; id.; belt of aurora?	☽
	11	369	50·8	47·8	3·0	1·2	0·5	20	26 : — : —	5·0	Scud; thin cirri.	
	12	353	53·2	49·6	3·6	1·5	1·5	22		10·0	Id.; cirrous clouds and haze.	)
	13	29·368	52·7	49·1	3·6	2·2	0·8	22		10·0	Scud; cirrous clouds and haze.	
	14	335	51·4	48·8	2·6	0·9	0·1	22		10·0	Id.; id.	
	15	335	53·1	50·3	2·8	0·6	0·6	22	25 : — : —	10·0	Id.; cirri and cirrous haze; drops of rain.	)
	16	294	54·5	50·9	3·6	1·1	1·5	22	24 : — : —	9·8	Id.; id.	)
	17	270	54·4	51·2	3·2	2·4	0·9	21	24 : 26 : 26	7·0	Id.; cir.-cum., mottled cir., cir.-str.; lunar corona.	☽
	18	241	54·7	51·2	3·5	1·6	0·9	21	25 : 25 : —	2·0	Id.; cirro-strati; cirri.	☽
	19	227	55·7	51·8	3·9	2·3	1·3	20	24 : 24 : 25	5·0	Id.; cir.-str. scud; mottled and lin. cirri; cir.-str.	☽
	20	217	54·3	51·0	3·3	1·2	0·8	20	24 : 23 : —	8·5	Id.; cirro-cumulo-strati; cirri; cirro-strati.	⊖
	21	219	55·3	52·6	2·7	1·3	0·4	20	24 : — : —	10·0	Id.; id.; drops of rain.	
	22	199	57·0	54·0	3·0	0·7	0·7	20	25 : 24 : —	8·5	Thin scud; cirro-cumuli; rainbow.	
	23	193	56·9	54·5	2·4	1·5	0·6	20	24 : — : —	9·2	Scud; cirro-strati; cirri; drops of rain.	
3	0	174	60·4	56·0	4·4	1·6	1·8	20	25 : — : —	6·0	Id.	⦶
	1	162	61·1	55·0	6·1	3·7	3·8	23	25 : — : —	7·5	Id.; loose cumuli.	
	2	185	57·7	50·9	6·8	5·8	3·5	26	24 : — : —	2·5	Id.; id.; cirrous haze; sky milky.	⊖
	3	200	57·7	50·7	7·0	7·0	4·2	28	25 : — : —	6·0	As before.	
	4	211	56·8	50·1	6·7	3·9	3·0	23	25 : — : —	8·0	Scud; loose cumuli.	⊖
	5	223	56·4	50·0	6·4	4·0	4·2	23	25 : — : —	5·5	Id.; id.; linear cirri; cirrous haze.	⊙
	6	234	54·4	49·0	5·4	3·5	1·7	25	26 : — : —	1·5	Id.; light cirro-strati to SW.	
	7	271	53·4	48·2	5·2	3·9	3·1	24	26 : — : —	0·5	Id.	
	8	298	52·0	47·9	4·1	3·2	2·5	24		0·1	Haze? to SE.	
	9	338	51·3	47·0	4·3	3·4	2·0	25		0·0	No clouds visible.	
	10	367	50·6	47·0	3·6	3·4	1·8	24		0·0	Quite clear; at 10h 5m, 0·2 of scud to W.	
	11	396	49·3	45·3	4·0	2·2	1·5	22		0·0	Id.	☽
	12	417	48·7	44·7	4·0	2·5	1·1	23		0·0	Id.; hazy to E.	☽
	13	29·436	48·9	44·7	4·2	1·7	1·0	23		0·2	Light cirro-strati to SW.	☽
	14	450	49·0	44·8	4·2	1·9	1·8	23		0·2	Id. to S. and E.	☽
	15	456	49·0	45·0	4·0	2·1	1·8	22		1·5	Cirro-strati to S.	☽
	16	469	48·4	44·8	3·6	2·0	1·0	20		1·0	Id.	☽
	17	502	48·2	44·7	3·5	2·3	0·7	21	24 : — : —	2·5	Scud; cirro-strati.	☽
	18	515	47·8	44·2	3·6	1·5	1·2	21	— : 24 : —	8·0	Cirro-cumuli; cirro-strati.	)
	19	543	48·0	44·6	3·4	0·8	0·6	22	— : 24 : —	6·5	Cirro-cumulo-strati; cirri; patches of scud to SE.	
	20	564	48·7	45·1	3·6	0·4	0·4	24	— : 25 : —	9·2	Id.; id.	
	21	582	50·4	46·3	4·1	0·6	0·4	20	— : 24 : —	9·5	Wavy and mottled cirro-cumulo-strati; patches of scud.	
	22	588	51·7	47·0	4·7	0·9	0·9	20	— : 25 : —	9·8	Cirro-cumulo-strati; undulated cirro-strati; scud to SE.	
	23	594	54·0	49·1	4·9	1·2	1·3	21	25 : 25 : 24	9·5	Scud; cir.-str. scud; woolly cirro-cumuli and cirri.	●
4	0	622	54·3	48·4	5·9	1·4	0·5	24	24 : — : —	10·0	Id.; dense cirro-strati and cirro-cumulo-strati.	
	1	621	55·0	49·1	5·9	0·5	0·2	21	24 : — : —	9·9	Id.; cirro-cumulous scud; cirro-strati.	⊖
	2	623	55·5	49·0	6·5	0·9	0·3	22	24 : — : —	10·0	As before.	
	3	621	53·3	48·3	5·0	0·7	0·3	20	24 : — : —	10·0	Scud; dense cirro-strati and cirrous haze.	
	4	612	52·7	48·2	4·5	0·5	0·1	20	— : 24 : —	10·0	Dense cir.-str. and haze; scud and loose cumuli on hor.	

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Oct. 3d 17h. Observation made at 17h 7m.

Oct. 3d 22h. Cirro-cumulo-strati becoming dense semifluid cirro-strati or cirro-stratous scud, having an undulated appearance, the ridges of the waves lying from SW. to NE., and bent with the convexity towards the E.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
4	5	29·597	52·0	47·6	4·4	0·1	0·0	22		10·0	As before.
	6	583	50·3	46·8	3·5	0·1	0·1	17		10·0	Id.; drops of rain.
	7	576	49·2	46·9	2·3	0·1	0·1	18		10·0	Dense cirro-strati and haze.
	8	575	48·9	47·3	1·6	0·1	0·1			10·0	Dark; rain^{1}
	9	576	47·6	45·8	1·8	0·2	0·0			10·0	Id.; rain^{2}
	10	563	46·0	45·2	0·8	0·1	0·1			10·0	Id.; rain^{1}
	11	523	45·5	44·9	0·6	0·0	0·0			10·0	Id.; rain$^{1-2}$
	12	488	44·8	44·2	0·6	0·0	0·0	4		10·0	Id.; rain$^{0·5}$
	13	29·439	44·0	43·7	0·3	0·2	0·2	4		10·0	Dark; rain$^{1-2}$
	14	417	44·0	43·8	0·2	0·2	0·2	4		10·0	Id.; rain^{1}
	15	366	44·0	43·8	0·2	0·4	0·3	3		10·0	Id.; id.
	16	364	44·8	44·6	0·2	0·3	0·2	2		10·0	Id.; id.
	17	344	45·2	44·9	0·3	0·3	0·2	3		10·0	Id.; rain$^{0·2}$
	18	351	46·1	45·6	0·5	0·2	0·2	31		10·0	Id.; id.
	19	363	46·0	45·3	0·7	0·2	0·1	29		10·0	Nearly homogeneous.
	20	368	46·0	45·0	1·0	0·1	0·0	29	— : 30 : —	10·0	Id.; cirro-strati; loose scud to N.
	21	387	47·3	46·1	1·2	0·1	0·0	28	28 : — : —	10·0	Scud; dense cirro-strati.
	22	410	48·3	46·8	1·5	0·1	0·0	25	26 : — : —	10·0	Id.
	23	409	49·6	47·8	1·8	0·1	0·0	22	26 : — : —	10·0	Id.
5	0	414	49·2	47·1	2·1	0·1	0·2	23	26 : — : —	10·0	Id.; loose cumuli; cirro-strati.
	1	416	50·6	47·2	3·4	0·5	0·3	23	26 : — : —	9·9	Scud and loose cumuli; cirro-strati. ●
	2	414	51·9	48·2	3·7	0·3	0·1	22	26 : — : —	9·9	Thick scud; cumuli; loose cumuli; cirro-strati.
	3	419	52·1	47·6	4·5	0·3	0·2	28	25 : 19 : —	9·0	Id.; cir.-cum.-str.; piles of cum.; cirri; cir.-str.
	4	429	51·5	46·6	4·9	0·3	0·2	20	27 : — : 22	5·0	Loose scud; woolly cirri; cumuli; cirro-strati. ⦶
	5	438	50·0	45·1	4·9	0·2	0·1	28	27 : — : —	3·0	Id.; as before.
	6	454	46·9	43·8	3·1	0·2	0·1	20	26 : 26 : —	4·5	Loose cum. and cir.-str.; sheets of cirri and cir. haze.
	7	473	44·1	41·9	2·2	0·1	0·2	20	— : 26 : —	1·5	Cirro-stratous scud; cirrous haze; rain to WNW.?
	8	489	41·4	40·9	0·5	0·2	0·1	20		0·5	Id.
	9	507	39·8	38·7	1·1	0·1	0·0	20		0·0	Hazy on horizon.
	10	517	39·3	38·2	1·1	0·1	0·2	18		0·0	Id.; very faint aurora?
	11	517	38·0	37·2	0·8	0·2	0·0			0·0	Clear; auroral light to N., just perceptible.
	12	526	36·4	36·0	0·4	0·0	0·0	22		0·3	Light clouds, chiefly to NW.
	23	29·480	50·6	46·5	4·1	2·2	1·7	22	23 : — : —	......	Sunday—Variable; clouds, scud, cum.-str., cirri; at times clear; passing showers.
6	13	29·516	41·0	38·9	2·1	3·4	0·6	21		0·2	Clouds to N.
	14	526	39·2	37·8	1·4	0·3	0·1	20		0·2	Id. to S. and W. ☽
	15	528	39·9	37·9	2·0	0·3	0·2	22		0·0	Quite clear. ☽
	16	535	38·8	37·3	1·5	0·3	0·2	22		0·0	Id. ☽
	17	547	38·9	37·3	1·6	0·2	0·2	21		0·2	Cirrous clouds to E. ☽
	18	569	37·2	36·0	1·2	0·3	0·1	21		0·2	Cirri; cirro-strati. ☽
	19	584	38·1	36·7	1·4	0·3	0·3	23		0·5	Cir.-str.; cumuli on E. horizon; strati on Cheviot. ☽
	20	603	39·3	37·5	1·8	0·2	0·2	22		0·5	As before. ☉
	21	626	41·6	39·2	2·4	0·2	0·2	22		0·5	Cirri, and as before. ☉ [hor. ☉
	22	649	44·4	41·3	3·1	0·4	0·6	25		0·3	Cir.-str.; cum. on ENE. hor.; detached cum. round
	23	659	47·0	42·7	4·3	0·4	0·3	26	28 : — : —	1·0	Detached loose cumuli; cir.-str.; cumuli on E. hor. ☉
7	0	668	49·7	44·6	5·1	0·4	0·2			4·0?	Loose cumuli. ⊖
	1	669	48·5	43·0	5·5	0·4	0·1	26	28 : — : —	2·5	Id. ☉
	2	678	49·2	43·1	6·1	0·3	0·0	28	28 : — : —	3·0	Id.; cirri; hazy. ☉
	3	683	48·6	42·9	5·7	0·4	0·1	26	26 : — : 28	8·0	Id.; cirri; cirrous haze; solar halo. ⊖
	4	694	48·9	42·9	6·0	0·1	0·0	28	25 : — : —	8·5	Scud; loose cumuli; cirri; cirrous haze.
	5	708	49·0	43·2	5·8	0·1	0·1	26	25 : — : 26	6·0	Loose cumuli; cirri; haze on horizon. ☉
	6	708	44·3	41·0	3·3	0·2	0·1	23	— : — : 26	5·0	Cirri; loose cumuli; id.
	7	725	42·7	39·7	3·0	0·2	0·1	24		0·2	Patches of scud; cirri; id.
	8	727	39·9	37·0	2·9	0·2	0·1			0·2	Id.;
	9	733	37·0	35·2	1·8	0·2	0·0			0·0	Hazy to E.
	10	736	33·9	33·3	0·6	0·1	0·0			0·0	Id.

Oct. 5d 2h 40m. A faint solar halo visible.

Oct. 5d 8h. A flash of lightning seen to E.: much lightning seen during the evening by various individuals; no thunder heard.

Oct. 7d 3h. Masses of loose cumuli, some of them apparently acted on by different currents: cirrous haze and cirri spreading over the sky; the haze on the horizon different from the cirrous haze.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
7 11	29·732	32·6	32·0	0·6	0·1	0·0	20		0·5	Cirri to NE.; faint aurora borealis.
12	728	32·3	32·0	0·3	0·1	0·0	10		0·2	Id.; id.
13	29·710	30·9	30·7	0·2	0·0	0·0			1·0	Cirro-strati.
14	705	32·0	31·7	0·3	0·0	0·0			0·5	Id.
15	676	30·1	29·9	0·2	0·0	0·0			2·0	Cirro-strati; cirri; cirrous haze. ☽
16	671	32·8	32·2	0·6	0·1	0·0			9·8	Cirrous mass; stars dim.
17	651	32·8	32·4	0·4	0·0	0·0	4		10·0	Id.; cirro-strati.
18	624	33·7	33·1	0·6	0·0	0·0	18		10·0	Homogeneous cirrous mass; hoar-frost.
19	612	33·8	33·2	0·6	0·0	0·0	7	— : 20 : —	10·0	Cirro-stratous scud; cirro-strati; haze; sky red to E.
20	604	35·0	34·3	0·7	0·1	0·1	7	— : 21 : —	10·0	Id.; id.; id.
21	580	37·6	36·7	0·9	0·0	0·0	30	— : 18 : —	10·0	Id.; id.
22	564	43·8	42·2	1·6	0·0	0·2	17	— : 20 : —	10·0	Id.; id.; haze. ●
23	551	48·8	44·7	4·1	0·8	0·2	17		10·0	Cirrous mass; cirro-strati. ●
8 0	518	51·7	46·3	5·4	0·6	0·4	18	— : 20 : —	10·0	Cirro-stratous scud; cirro-strati; haze.
1	479	51·9	46·2	5·7	0·5	0·3	15		10·0	As before.
2	460	51·8	46·7	5·1	0·6	0·4	16		10·0	Dense cirro-strati and haze, breaking to SW. ●
3	432	52·2	47·0	5·2	1·0	0·4	14		10·0	Id. ●
4	406	50·8	45·9	4·9	0·6	0·5	15	— : 20 : —	10·0	Id.
5	383	49·6	45·6	4·0	0·6	0·3	15	— : 20 : —	10·0	Id.
6	369	48·8	45·5	3·3	0·9	0·6	16	— : 18 : —	10·0	Cirro-strati; homogeneous cirrous mass; misty.
7	347	48·6	45·5	3·1	1·1	0·3	15		10·0	Id.; id.
8	317	49·3	45·8	3·5	1·9	1·1	16		10·0	Id.; id.
9	289	48·8	45·2	3·6	2·4	1·9	16		10·0	Very dark.
10	266	49·0	45·8	3·2	2·7	2·6	16		10·0	Id.; some stars visible at 10h 10m.
11	247	48·9	45·8	3·1	2·3	1·3	15		9·9	Scud and cirro-strati?
12	209	48·8	45·4	3·4	2·8	0·9	14		10·0	Dark.
13	29·178	47·9	44·0	3·9	2·4	1·8	15		10·0	Dark.
14	136	47·0	43·4	3·6	3·1	2·8	13		10·0	Very dark.
15	122	46·8	43·4	3·4	2·8	2·7	14		10·0	Id.
16	080	47·0	43·7	3·3	4·2	2·7	14		10·0	Id.
17	060	46·8	43·7	3·1	3·1	3·1	13		10·0	Dense clouds.
18	048	46·8	43·6	3·2	3·1	1·7	14		10·0	Cirro-strati and scud.
19	008	46·9	43·4	3·5	5·5	3·8	14	13 : 16 : —	10·0	Patches of scud; cir.-str.; homogeneous cirrous mass.
20	019	47·1	43·9	3·2	4·4	2·4	14	13 : 16 : —	10·0	Scud; id.; id.
21	29·010	47·9	44·3	3·6	2·8	2·1	13	13 : — : —	10·0	Id.; id.; id.
22	28·994	48·7	45·0	3·7	3·0	2·6	13	13 : — : —	10·0	Id.; id.; id.
23	966	49·3	45·5	3·8	2·4	2·2	13	13 : — : —	10·0	Id.; id.; id.
9 0	954	50·8	46·2	4·6	3·5	2·7	13	13 : — : —	10·0	As before; 0h 10m drops of rain.
1	960	50·5	46·3	4·2	2·8	1·7	13	13 : — : —	10·0	Id.; drops of rain occasionally.
2	929	51·0	47·2	3·8	1·5	1·3	11	12 : 16 : —	10·0	Scud; cirro-strati; cirrous mass breaking.
3	916	51·0	47·3	3·7	2·0	1·5	12	12 : — : —	10·0	Id.; id.; id.
4	886	51·0	47·7	3·3	2·0	2·6	13	12 : — : —	10·0	Id.; id.; id.
5	879	50·6	48·0	2·6	2·2	1·3	12	12 : — : —	10·0	Id.
6	850	51·0	48·5	2·5	3·5	2·0	14	13 : — : —	10·0	Id.
7	850	51·5	49·1	2·4	2·6	1·0	12		10·0	Id.
8	834	52·1	49·8	2·3	1·9	1·5	12		10·0	Very dark.
9	805	52·8	50·1	2·7	2·5	1·8	13		10·0	Id.; drops of rain.
10	781	52·3	50·3	2·0	2·6	1·1	13		10·0	Id.; rain$^{0·5}$
11	758	52·7	51·0	1·7	2·3	2·0	13		10·0	Id.
12	740	53·3	52·0	1·3	2·0	2·3	11		10·0	Id.
13	28·710	54·2	52·3	1·9	1·0	1·4	11		10·0	Very dark, breaking to SE.
14	696	55·0	52·8	2·2	2·5	2·0	11		10·0	Id.; rain$^{1·0}$
15	680	54·6	51·2	3·4	2·5	1·8	13		10·0	Id., breaking to SE.
16	677	53·3	50·3	3·0	1·7	2·0	14		10·0	Id.
17	694	52·3	49·2	3·1	1·8	1·3	14		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
9	18	28·717	50·9	47·7	3·2	3·0	0·1	14		7·0	Scud; cirro-cumulous scud; cirro-strati.
	19	733	51·2	47·6	3·6	1·8	2·9	16	18 : 16 : —	9·7	Id.; cirro-cumuli, cirri, and cirro-strati.
	20	775	50·1	47·3	2·8	2·0	1·4	16	18 : 16 : —	9·5	As before.
	21	794	51·6	48·2	3·4	1·6	1·2	16	17 : — : 16	9·5	Scud to S.; waves of woolly cirri; cir.-cum.; cir.-str.
	22	816	54·7	50·2	4·5	2·2	1·7	16	— : — : 15	9·5	Id.; woolly cirri; cirro-cumuli; cir.-str. ⊖
	23	838	55·7	51·7	4·0	2·5	2·0	16	— : — : 15	9·5	Woolly cirri and cirro-strati; patches of scud. ⊖
10	0	841	58·0	53·2	4·8	2·4	3·0	16	17 : 15 : —	8·2	Scud, &c. as at 21h. ⦶
	1	857	58·9	53·6	5·3	2·9	1·4	17	17 : 15 : 15	8·5	Masses of loose cumuli; cirri; cirro-strati. ⊖
	2	876	58·4	53·7	4·7	1·9	0·4	16	16 : — : —	9·8	Scud; loose cumuli; cirri; cirro-strati.
	3	882	61·0	55·4	5·6	1·0	0·6	16	16 : — : —	6·0	As before. ⊙
	4	899	57·7	54·1	3·6	1·3	0·9	17	17 : — : —	4·0	Scud; loose cum.; double rainbow & rain$^{0·5}$ at 3h 58m. ⊙
	5	917	57·0	54·0	3·0	0·8	0·3	18	16 : — : —	7·5	Id.; cumuli; nimbi; patches of cirri; rainbow. ⊖
	6	940	51·2	50·0	1·2	0·1	0·0	18	18 : — : —	3·5	Id.; id.; cirri; cirro-strati.
	7	959	50·3	48·9	1·4	0·2	0·4	18		4·5	Id.; masses of cumuli.
	8	28·994	47·0	46·2	0·8	0·2	0·0	17		0·5	Clouds round horizon.
	9	29·015	44·8	44·5	0·3	0·1	0·0			0·2	Clouds and haze on horizon.
	10	037	45·7	45·0	0·7	0·3	0·1	18		0·5	Scud.
	11	050	46·7	46·0	0·7	0·2	0·0			4·0	Cirrous scud? shower$^{0·2}$
	12	067	46·5	46·0	0·5	0·1	0·0			2·0	Id.
	13	29·089	45·8	45·5	0·3	0·2	0·0	12		0·5	Cirro-strati?
	14	105	46·0	45·9	0·1	0·1	0·0			8·0	Id.
	15	125	47·1	46·9	0·2	0·2	0·3	18		1·5	Id.
	16	135	46·9	46·3	0·6	0·4	0·2	18		0·8	Cirri; cirro-strati.
	17	148	47·2	46·6	0·6	0·6	0·4	18		0·0	
	18	156	46·0	45·5	0·5	0·4	0·3	18		3·0	Cirri; cirro-strati; cumuli and haze on horizon.
	19	181	46·0	45·4	0·6	0·3	0·2	18	— : 18 : —	5·0	Cirro-cumuli; cirro-strati; scud on hor. and Cheviot.
	20	198	48·8	47·7	1·1	0·9	0·6	17	— : 20 : —	7·0	Cirri; cirro-cumuli; scud; cirro-strati; cumuli. ⊖
	21	209	52·6	50·9	1·7	1·0	1·2	18	19 : — : —	8·0	Scud; cirro-strati, cirri, and cirrous haze. ⊖
	22	238	53·5	52·0	1·5	0·9	0·5	17	21 : 19 : —	8·0	Id.; cirro-cumuli; cirri; cirro-strati. ⊖
	23	251	54·0	50·5	3·5	0·9	0·8	20	20 : 20 : —	6·0	Id.; cirro-strati. ⊖
11	0	259	54·0	51·2	2·8	1·5	0·7	20	19 : — : —	3·0	Id.; cumuli; cumulo-strati; cirro-strati; cirri. ⊙
	1	268	56·3	51·7	4·6	1·3	1·1	18	19 : — : —	9·5	Thick scud; cirro-strati; cumuli.
	2	281	56·0	52·3	3·7	1·7	1·2	20	20 : — : —	7·0	Scud; id.; cumuli and cirri. ⊖
	3	292	56·0	52·3	3·7	1·6	0·5	20	20 : — : —	6·0	As before. ⊖
	4	305	54·9	51·3	3·6	0·6	0·2	19	21 : — : —	9·5	Id.
	5	321	53·5	50·7	2·8	0·6	0·3	19	21 : — : —	9·5	Scud; cir.-cum.; cirri; cir.-str.; rainbow; shower$^{0·5}$
	6	332	51·7	49·3	2·4	0·4	0·3	19	22 : 21 : —	8·2	Cirrous and loose scud; cirri; cirro-strati.
	7	350	49·9	48·1	1·8	0·3	0·2	19		7·8	Nearly as before.
	8	366	47·5	46·3	1·2	0·2	0·0			5·0	Id.
	9	372	50·0	48·4	1·6	0·2	0·3	20		6·8	Id.
	10	371	46·6	45·8	0·8	0·2	0·1	19		0·5	Cirro-strati.
	11	372	44·6	44·0	0·6	0·2	0·0			0·2	Id. to NE.
	12	375	43·8	43·1	0·7	0·1	0·0			0·0	Clear.
	13	29·385	42·8	42·5	0·3	0·0	0·0			0·1	Patch of cloud to SW.
	14	389	43·4	43·0	0·4	0·1	0·0			4·0	Thin clouds.
	15	389	43·7	43·1	0·6	0·1	0·0	22		2·0	Id. to SE.
	16	384	42·7	42·1	0·6	0·0	0·0			2·5	Id.
	17	386	42·4	42·1	0·3	0·0	0·0			1·0	Id.
	18	383	41·0	40·6	0·4	0·0	0·0	16		1·5	Cirri and cirro-strati; mist and strati rising. [hor.
	19	384	39·1	39·0	0·1	0·0	0·0	20	— : 26 : —	2·0	Cirri; cir.-str.; cir.-cum.; bank of grey cum. to S.; clouds red round
	20	392	40·8	40·7	0·1	0·1	0·0	18	20 : — : —	8·0	Scud; cirri, &c. as before. ⊙
	21	394	44·5	44·0	0·5	0·0	0·0	28	19 : 19 : 26	9·5	Cir.-str. scud; woolly cirri; cirro-strati; stratus E. ⊖
	22	389	49·7	48·7	1·0	0·0	0·0	6	— : 21 : 26	9·5	Cir.-cum. scud; woolly cir.; cir.-str.; scud on Cheviot. ●
	23	373	54·8	52·7	2·1	0·1	0·3	17	17 : 19 : —	9·9	Scud; woolly cirri; cirro-strati. ●
12	0	364	55·9	52·8	3·1	0·5	0·4	17	19 : — : —	9·9	Id.; id.
	1	335	57·8	54·2	3·6	0·4	0·3	17	19 : — : —	9·5	Id.; cirri; cirro-strati; cumuli to S.; rain$^{0·5}$

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Oct. 9d 23h. The cirri and cirro-strati terminate to W. in a sharply-defined edge, apparently quite straight, lying NNW. to SSE., altitude about 10°, meeting the horizon in S. and NW.; this has continued for more than an hour.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
12	2	29·318	57·6	54·8	2·8	0·2	0·1	18	20 : — : —	10·0	Scud; cirri; cirro-str.; cumuli to S.; $rain^{0·5}$
	3	306	56·8	54·0	2·8	0·2	0·1	17	16 : — : —	10·0	Thick scud; loose cumuli; cirro-strati.
	4	272	56·5	53·4	3·1	0·2	0·1	15	— : 16 : —	10·0	Cirro-stratous scud; cirro-strati.
	5	255	55·4	53·0	2·4	0·2	0·1	15	18 : — : —	10·0	Scud; cirrous mass; id.
	6	239	54·0	51·9	2·1	0·3	0·3	14	— : 18 : —	10·0	Cirro-stratous scud and dense cirro-strati.
	7	226	53·6	51·7	1·9	0·4	0·3	14		10·0	As before.
	8	215	54·1	52·2	1·9	0·4	0·6	15		10·0	Dark.
	9	183	55·0	53·0	2·0	1·3	1·3	16		8·0	Thin clouds.
	10	170	55·3	53·3	2·0	1·3	0·9	15		9·5	A few stars visible; drops of rain.
	11	154	55·2	53·3	1·9	1·3	0·6	15		5·0	Stars dim; id.
	12	125	55·3	53·5	1·8	1·1	1·3	14		10·0	Dark.
	23	29·028	60·1	55·6	4·5	1·8	1·3	18	16 : 18 : —	...	Sunday—Fine day, clear and cloudy; clouds, chiefly cauliflower cumuli, and cumulo-strati.
13	13	28·862	54·6	51·8	2·8	1·9	0·6	15		10·0	Dark; drops of rain.
	14	854	53·1	50·2	2·9	0·5	0·5	15		8·5	Scud and cirrous clouds?
	15	848	49·7	48·1	1·6	0·4	0·1	15		3·0	Id.
	16	838	48·3	46·9	1·4	0·2	0·1	17		2·0	Id.
	17	833	47·0	46·1	0·9	0·1	0·0			4·0	Cirro-stratous scud? drops of rain.
	18	831	47·3	46·6	0·7	0·0	0·0	20		10·0	Scud; cirro-stratous scud? $rain^{0·2-0·8}$ since 17^h.
	19	832	49·0	48·2	0·8	0·2	0·1	16	17 : — : —	10·0	Id.; cirrous mass; cirro-strati; $rain^{0·5}$
	20	838	49·5	48·3	1·2	0·6	0·3	18	18 : 20 : —	9·5	Cirri; cirro-cumuli; loose scud; cirro-strati. ⊖
	21	842	52·2	50·4	1·8	0·6	0·4	17	18 : 17 : —	9·8	Loose scud; cir.-cum. scud; cirri; cir.-str.; rainbow. ⊖
	22	845	51·9	49·7	2·2	1·2	0·9	17	19 : 17 : —	8·5	Scud; cirro-cumulo-strati; cirri; cirro-strati. ⊖
	23	864	52·6	49·0	3·6	1·3	1·0	17	— : 19 : 16	9·5	Cirro-stratous scud; cir.-cum.-str.; cirri; cir.-str.
14	0	868	53·5	50·0	3·5	1·3	0·8	18	— : 18 : —	10·0	Cirro-cumulous scud; cirro-strati; loose cumuli; scud.
	1	868	54·0	50·4	3·6	1·2	0·4	17	— : 18 : —	9·9	Id.; cirro-strati and cumuli.
	2	866	55·0	49·8	5·2	1·4	0·7	18	18 : 16 : —	9·8	Scud; cir.-cum.-str.; cumuli; cum.-str.; cir-str. ⊖
	3	857	54·0	49·8	4·2	1·2	0·3	18	19 : 16 : —	7·0	Id.; id.; id. ⊖
	4	847	52·3	49·0	3·3	0·3	0·1	17	— : — : 16	6·0	Woolly and linear cirri; cumuli, &c. as before. ⊖
	5	836	51·3	48·3	3·0	0·1	0·1	20	— : — : 16	5·0	Id.; id.; nimbi. ⊖
	6	832	49·7	47·9	1·8	0·3	0·0	20	16 : 16 : —	9·5	Scud; nimbi; cumulo-strati; $rain^{1-2}$ lately.
	7	819	48·2	47·0	1·2	0·0	0·0	4		8·0	Nearly as before; $rain^{0·5}$
	8	791	47·1	46·4	0·7	0·0	0·0	6		6·0	Cirro-strati, &c.; flash of lightning to SW.
	9	772	44·0	43·8	0·2	0·1	0·0	6		2·0	Id.; a flash of lightning to SW. at 8^h 10^m.
	10	736	44·2	43·6	0·6	0·0	0·0	6		1·8	Id.
	11	722	42·8	42·3	0·5	0·0	0·0			6·0	Thin clouds; flash of lightning on WSW. horizon.
	12	687	44·7	44·1	0·6	0·0	0·0			10·0	Overcast.
	13	28·650	46·8	46·3	0·5	0·1	0·0			10·0	Dark; drops of rain.
	14	639	47·6	47·0	0·6	0·1	0·0			10·0	$Rain^{0·5-2·5}$ since 13^h.
	15	632	46·8	46·1	0·7	0·0	0·0			10·0	$Rain^{0·5}$
	16	612	47·0	46·6	0·4	0·0	0·0			10·0	Drops of rain.
	17	602	47·1	46·6	0·5	0·0	0·0			10·0	$Rain^{0·5}$
	18	596	46·0	45·6	0·4	0·1	0·0			10·0	$Rain^{2}$
	19	596	45·7	45·2	0·5	0·1	0·1	22	30 : 0 : —	10·0	Scud; dense cirro-strati; $rain^{0·5}$
	20	603	46·3	45·9	0·4	0·1	0·1	22	30 : — : —	10·0	Id.
	21	609	47·2	46·3	0·9	0·1	0·2	24	30 : — : —	9·5	Id.; dense cirro-strati; woolly cirri.
	22	618	48·8	46·8	2·0	0·2	0·3	24	— : — : 31	8·5	Woolly cirri; scud; cirro-strati round horizon. ●
	23	620	50·7	47·9	2·8	0·3	0·2	20	— : 30 : 0	9·5	Cir.-str. scud; chiefly lin. and woolly cir.; solar halo. ⊖
15	0	624	52·1	48·3	3·8	0·5	0·3	24	— : 29 : 0	9·5	As before, with cirrous haze and halo. ⦶
	1	619	54·2	48·7	5·5	1·4	1·5	25	29 : — : 0	9·0	Cumuli; scud; woolly cirri; cir. haze; faint halo. ⊖
	2	619	54·0	48·7	5·3	1·3	0·6	22	26 : — : 8	8·5	Scud; loose cumuli; woolly cir.; cir. haze; solar halo.
	3	623	52·6	47·9	4·7	0·5	0·3	24		5·0	Id.; id.; cum.; cir.; cir. haze round hor. ⦶
	4	614	53·1	48·0	5·1	0·7	0·4	22	— : 26 : —	3·0	Cirro-stratous scud; cirri; sky hazy. ⊙
	5	615	52·3	47·9	4·4	0·6	0·4		— : 26 : —	3·5	Id.; cir.-cum. scud; cumuli to S. ⊙
	6	612	50·3	46·1	4·2	0·6	0·5	22	— : 26 : —	5·0	Id.; id. ☽
	7	619	49·6	45·9	3·7	0·8	0·5	22	— : 26 : —	7·0	Id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Oct. 15^d 2^h. The motion of the cirri is so slow that the direction has been to some extent doubtful; after considerable watching the motion seems to be from about E.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1^h.	10^m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
15	8	28·617	49·8	46·4	3·4	0·5	0·5	21		9·8	Scud; cirri above.
	9	622	49·6	46·3	3·3	0·6	0·3	22		9·9	Id.
	10	622	49·0	46·3	2·7	0·7	0·3	22		9·5	Id.
	11	630	48·0	45·0	3·0	0·5	0·2	21		9·0	Id.; clouds broken.
	12	639	46·9	45·2	1·7	0·2	0·1	22		6·0	Id.; drops of rain.
	13	28·648	47·0	45·7	1·3	0·3	0·1			10·0	Scud; rain$^{2·0}$
	14	662	46·1	45·2	0·9	0·2	0·1			10·0	Id.; dark; rain$^{1·0}$
	15	670	46·3	45·8	0·5	0·2	0·1			10·0	Id.; rain$^{0·5}$
	16	673	45·8	45·0	0·8	0·2	0·1			9·0	Id.; clouds broken.
	17	679	45·0	43·8	1·2	0·1	0·2	28		7·5	Id.; id.
	18	689	47·2	45·0	2·2	0·3	0·4	29		8·0	Id.; id.
	19	701	47·0	44·8	2·2	0·4	0·2	25	25 : — : —	7·0	Scud and cirro-strati; cirri.
	20	725	45·2	43·9	1·3	0·4	0·0	22	— : 26 : —	8·0	Cirro-stratous scud; cirro-cumuli; cirri. ⊖
	21	743	48·3	46·1	2·2	0·2	0·1	22	— : 30 : —	9·0	The same.
	22	754	49·0	46·8	2·2	0·1	0·2	22	— : 30 : —	6·5	Cirro-cumulous scud; loose cirro-cumuli; scud to S.
	23	765	50·9	47·1	3·8	0·4	0·4	28		3·0	Id.; loose cum. on N. and S. hor. ⊙
16	0	774	51·1	48·8	5·3	0·9	0·4	28	29 : — : —	8·0	Scud and loose cumuli; cirro-strati; cirri. ⊙
	1	769	53·7	47·5	6·2	0·8	0·7	27	28 : 28 : —	3·0	Id.; id.; ⊖
	2	771	56·0	50·1	5·9	0·7	0·5	22	28 : — : —	8·5	Id. ⦶
	3	768	54·8	48·9	5·9	1·0	0·4	22	28 : — : —	9·5	Id.; cir.-cum. scud; cir.-str. ⊖
	4	783	51·0	48·4	2·6	1·0	0·5	28	29 : 27 : —	9·8	Scud; dense cirro-stratous scud to S.; cirro-strati.
	5	785	50·3	46·8	3·5	0·9	0·6	28	30 : 30 : —	9·5	Id.; cir.-str. scud; the scud touching the top of Che-
	6	808	50·2	46·2	4·0	1·3	0·7	28	30 : — : —	10·0	Scud; cirro-strati. [viot.
	7	824	49·9	46·2	3·7	0·6	0·2	28		9·9	Id.; sky to NW.
	8	842	49·6	46·0	3·6	0·6	0·4	26		9·0	Id.; id.
	9	855	48·4	45·0	3·4	0·5	0·7	28		6·0	Id.; stars bright.
	10	867	46·9	43·0	3·9	0·4	0·4	28		1·0	Clouds on E. horizon.
	11	878	48·0	44·6	3·4	0·7	0·6	27		8·0	Scud; cirro-strati? sky to W.
	12	877	48·4	44·7	3·7	1·3	0·6	28		9·0	As before.
	13	28·885	47·8	44·3	3·5	1·5	0·6	28		4·0	As before.
	14	878	48·0	44·3	3·7	1·2	0·9	28		5·0	Id.
	15	879	47·6	44·3	3·3	1·1	1·4	28		4·5	Cirrous scud? shower$^{0·5}$
	16	884	48·1	44·7	3·4	1·7	1·5	29		9·8	Id.
	17	891	48·3	44·5	3·8	1·7	1·7	28		9·0	Id.
	18	890	48·8	44·6	4·2	1·9	1·7	28		9·0	Scud; cirrous scud; shower$^{0·2}$; stars dim.
	19	913	47·0	44·3	2·7	2·2	1·7	28	29 : — : —	10·0	Id.; rain$^{0·5}$
	20	936	47·5	44·7	2·8	2·2	1·7	28	30 : — : —	10·0	Rain$^{0·5}$
	21	960	48·0	45·0	3·0	1·7	1·2	29	31 : — : —	10·0	Thick scud.
	22	28·995	47·7	45·4	2·3	1·5	1·3	29	31 : — : —	10·0	Id.; rain$^{1·5}$
	23	29·017	47·7	45·5	2·2	1·8	1·3	29	31 : — : —	9·9	Id.; rain$^{0·2}$
17	0	037	49·5	46·2	3·3	1·7	1·2	30	0 : — : —	10·0	Scud; cirro-strati.
	1	048	50·0	46·7	3·3	1·5	1·6	31	0 : — : —	9·9	Id.; id.; passing showers$^{0·2}$
	2	068	50·9	46·7	4·2	1·6	0·7	29	31 : 0 : —	9·5	Id.; cirro-cumulo-strati; cirro-strati.
	3	078	51·8	46·7	5·1	1·7	1·6	30	31 : 0 : —	9·5	As before.
	4	095	50·9	45·9	5·0	1·7	1·4	30	— : 0 : —	8·5	Cir.-cum. scud.; cirro-strati; part of a rainbow. ●
	5	114	48·7	45·0	3·7	1·2	0·4	29	— : 0 : —	4·0	Cirro-cumuli; cirro-strati; haze; id. ⊙
	6	136	47·4	44·1	3·3	1·3	0·6	29	— : 0 : —	6·0	Cirro-stratous scud; woolly cirro-strati.
	7	154	46·6	44·1	2·5	0·9	0·7	28		4·0	Scud; cirro-strati; lunar corona. ☽
	8	167	47·2	44·0	3·2	0·7	0·5	27		9·9	Id.; a few stars visible.
	9	189	48·1	44·5	3·6	1·1	0·4	28		10·0	Scud?
	10	191	48·1	44·3	3·8	1·2	1·0	28		9·9	Id.
	11	209	47·7	44·0	3·7	0·9	0·3	30		9·8	Id.
	12	223	46·6	43·2	3·4	1·2	0·7	28		3·0	Id.; in 5^m the sky clouded was 8·0.
	13	29·242	46·7	43·2	3·5	0·6	0·2	28		9·5	Scud?
	14	252	46·4	42·8	3·6	0·5	0·4	27		9·9	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Oct. 16^d 3^h 30^m. Dense scud and cirro-stratous scud with a slight shower came up suddenly at this time.

Oct. 17^d 8^h. Observation made at 8^h 6^m.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
17	15	29·267	46·0	42·7	3·3	0·6	0·3	26		9·9	Scud ?
	16	289	45·9	42·5	3·4	0·4	0·1	26		9·9	Id.
	17	299	45·8	42·3	3·5	0·5	0·3	28		10·0	Id.
	18	320	45·9	42·2	3·7	0·7	0·4	29		9·8	Id.; sky to NNE.
	19	342	45·4	41·9	3·5	0·5	0·3	29	— : 0 : —	9·8	Cirro-stratous scud; cirro-strati; scud on Cheviot.
	20	370	45·2	42·0	3·2	0·6	0·2	30	— : 0 : —	9·2	As before; drops of rain; showers to E.
	21	391	45·2	42·0	3·2	0·3	0·4	28	— : 0 : —	9·9	Cir.-str. scud; cirro-strati; scud on Cheviot.
	22	411	46·7	42·0	4·7	0·7	0·8	29	0 : 29 : —	9·0	Id.; loose cum.; cir.-str.; scud on Cheviot.
	23	427	48·1	43·9	4·2	0·8	0·6	30	0 : 28 : —	4·0	Id.; id.; woolly cirri; cir.-str. ⊙
18	0	442	48·3	43·3	5·0	1·2	1·0	30	28 : — : —	4·0	Loose cumuli; cumuli; cirro-strati. ⊙
	1	461	47·5	42·8	4·7	1·2	0·4	30	27 : — : —	5·5	Id.; id.; id. ●
	2	465	48·9	44·2	4·7	0·8	0·4	28	28 : 24 : —	8·5	Id.; woolly cirro-strati. ●
	3	468	48·1	43·3	4·8	0·6	0·5	28	27 : 23 : —	9·0	As before; piles of cumuli on horizon.
	4	474	47·3	42·3	5·0	0·7	0·3	28	22 : 24 : —	9·0	Scud; loose cum.; cir.-str. ●
	5	479	45·8	41·4	4·4	0·2	0·2	28		9·5	Id.; id.; cum.-str.; cir.-str.; rain to W.
	6	486	43·1	40·7	2·4	0·2	0·0	22	24 : — : —	7·5	Id. ☽
	7	494	42·9	40·0	2·9	0·1	0·0			9·7	Id.
	8	496	41·8	39·3	2·5	0·0	0·0			9·8	Id.; cirro-cumulous scud.
	9	498	37·4	36·0	1·4	0·0	0·0			3·0	Id.; id.
	10	494	34·0	33·5	0·5	0·0	0·0			0·1	Id. ?
	11	491	32·2	31·8	0·4	0·1	0·1			0·2	Cirrous clouds to W.; haze.
	12	483	35·3	34·2	1·1	0·1	0·1			6·0	Scud.
	13	29·466	32·0	31·6	0·4	0·0	0·0			0·5	Scud ? haze.
	14	458	32·3	31·7	0·6	0·2	0·1	20		0·0	Very clear.
	15	440	30·7	30·0	0·7	0·1	0·1	17		0·0	Id.
	16	420	31·7	30·9	0·8	0·1	0·1	20		0·2	Haze round horizon.
	17	414	31·4	30·4	1·0	0·2	0·0			3·0	Scud.
	18	393	30·7	30·0	0·7	0·0	0·0	20		0·5	Cirri; cirro-strati to E.
	19	358	31·0	30·2	0·8	0·0	0·0	20		7·0	Scud, cirri, and cirro-strati.
	20	335	32·7	32·2	0·5	0·0	0·0	24	21 : 21 : —	9·5	Thick scud and dense cirro-strati; rain$^{0·2}$
	21	308	37·7	37·0	0·7	0·1	0·0	8	19 : — : —	10·0	Loose and cirro-stratous scud; dense cirro-strati.
	22	274	39·7	38·6	1·1	0·4	0·5	16	20 : — : —	10·0	The same.
	23	245	41·9	40·7	1·2	0·6	0·1	16	19 : — : —	10·0	Id.
19	0	222	44·0	42·0	2·0	0·8	0·4	20	19 : — : —	10·0	Thick scud.
	1	188	47·6	44·9	2·7	2·1	0·4		20 : — : —	9·8	Id., sky to E.
	2	157	48·1	45·6	2·5	1·1	0·5	18	22 : — : —	7·0	Scud.
	3	138	50·0	45·9	4·1	1·6	1·0	19	22 : — : —	2·0	Id.; loose cumuli. ⊙
	4	132	48·8	44·7	4·1	1·1	0·3	20	22 : — : —	2·0	Loose cumuli; cirro-strati to S.
	5	122	46·9	43·7	3·2	1·0	0·4	20	23 : — : —	5·0	Thick scud; cirri and cirro-strati to S.; rain to NE.
	6	116	42·3	40·7	1·6	1·2	0·3	20	23 : — : —	3·0	Id.; cirro-strati; at 5h 45m rain^2
	7	116	40·0	39·0	1·0	0·6	0·1	20	23 : — : —	4·0	Id.; id. ☽
	8	114	38·0	37·0	1·0	0·1	0·1	19		0·5	Clouds on S. and E. horizon. ☽
	9	109	39·2	37·4	1·8	0·1	0·1	20		0·5	Clouds on S. horizon. ☽
	10	108	35·7	35·3	0·4	0·1	0·1	20		0·7	Id. ☽
	11	081	37·6	37·0	0·6	0·1	0·0	18		4·0	Scud; cir.-str. scud rising from W.; cirrous haze.
	12	071	38·8	37·2	1·6	0·2	0·2	19		9·0	Id.; drops of rain; flash of lightning.
	23	29·003	45·7	44·2	1·5	0·6	0·2	20	— : 22 : —	...	Sunday—Cloudy, with sunshine; masses of nimbi; heavy showers.
20	13	29·148	30·0	29·7	0·3	0·9	0·0			0·2	Cirro-strati near horizon. ☽
	14	160	30·1	30·1	0·0	0·0	0·0			0·3	Id.; aurora borealis.
	15	171	29·1	...	...	0·0	0·0			0·2	Id.; id.
	16	193	28·2	28·1	0·1	0·0	0·0			0·2	Id.; id.
	17	215	27·6	27·6	0·0	0·1	0·0			0·8	Id.; id.
	18	235	26·6	26·4	0·2	0·1	0·0			2·0	Scud; cirro-strati; id.
	19	258	30·6	30·0	0·6	0·0	0·0	17		7·0	Id.; cirro-stratous scud.
	20	295	31·9	31·3	0·6	0·1	0·0	26	— : 14 : —	2·5	Loose cirro-cumulo-strati; cirro-strati. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Oct. 19d 10h—11h. Several flashes of lightning seen. A faint flash was seen at 12h 0m, and a bright one at 12h 7m to SW., near the horizon; at 12h cirrous haze and scud nearly covered the sky.

Oct. 20d 19h 20m. Cirro-cumulous scud moving from E.; drops of rain: much hoar-frost throughout the night.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.	
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.		
20 21	29·316	33·4	32·7	0·7	0·1	0·0	18		0·5	Cirri; cirro-strati on horizon.	⊙
22	349	36·2	35·0	1·2	0·1	0·0	25		0·5	Cirro-cumulo-strati; cirro-strati to S.	⊙
23	370	40·2	39·0	1·2	0·1	0·0	21	—: 0 : —	1·0	Woolly cirri and cirro-cumuli; hazy on horizon.	⊙
21 0	380	45·0	42·9	2·1	0·1	0·0	4	—: 2 : —	1·0	Piles of cumuli on N. horizon; woolly cirro-strati.	⊙
1	397	46·7	43·7	3·0	0·2	0·0	7		2·0	Id. N. and S. hor.; cir.-str.; haze.	⊙
2	417	48·2	44·9	3·3	0·1	0·0	9	2 : — : —	5·0	Loose cumuli; cumuli; cirro-strati; cumulo-strati.	⊙
3	434	48·7	45·5	3·2	0·2	0·0	2	—: 3 : —	8·5	Cir.-cum.-str.; cir.-str.; piles of cumuli to N.	
4	437	48·6	45·4	3·2	0·2	0·0	2	3 : 5 : —	5·5	Scud; cumulo-strati; hazy and electric clouds to SE.	
5	469	47·2	44·8	2·4	0·2	0·0	3	3 : 5 : —	6·5	Nearly as before.	
6	491	45·1	42·7	2·4	0·1	0·0	2	3 : — : —	8·0	Id.	
7	521	45·0	43·9	1·1	0·0	0·0	4		9·0	Id.?	
8	535	43·1	42·3	0·8	0·0	0·0			1·0	Scud; cumulo-strati.	☽
9	553	42·0	41·2	0·8	0·0	0·0	2		9·0	Id.; cirro-cumulous scud.	
10	567	39·8	39·5	0·3	0·0	0·0			7·0	Id.; id.	☽
11	568	40·2	39·0	1·2	0·0	0·1	1		2·0	Id.; id.	☽
12	581	41·2	10·0	1·2	0·0	0·1			7·0	Cirro-cumulo-strati; scud.	
13	29·588	39·2	38·7	0·5	0·0	0·0	1		1·5	Cirro-cumulo-strati; cirro-strati; cumuli.	☽
14	595	40·0	39·0	1·0	0·2	0·2	1		0·8	Cumuli; cirro-strati on SE. horizon.	☽
15	599	38·2	37·6	0·6	0·2	0·3	1		0·5	Id.; id.	
16	608	40·0	39·2	0·8	0·5	0·2	30		1·0	Clouds to E.	
17	613	36·8	36·3	0·5	0·2	0·1			0·5	Clouds on E. horizon.	
18	611	36·2	35·0	1·2	0·0	0·0			0·5	Bank of clouds on E. horizon.	
19	616	37·0	36·4	0·6	0·0	0·0	24		2·5	Scud to SE.	
20	634	36·8	36·1	0·7	0·0	0·0	24 v.	8 : — : —	7·0	Scud; cirro-cumulous scud.	
21	652	39·5	38·8	0·7	0·1	0·0	18	4 : — : —	9·2	The same.	
22	648	43·5	42·1	1·4	0·0	0·0	18	4 : — : —	8·0	Id.	
23	650	45·1	42·9	2·2	0·0	0·0	30	4 : — : —	3·0	Id.	⊙
22 0	647	45·3	43·3	2·0	0·1	0·0	28		1·0	Scud and cirro-strati on horizon; patches of cirri.	⊙
1	637	47·2	44·7	2·5	0·1	0·0	16 v.		1·0	Loose cumuli; cirro-stratous scud near horizon.	⊙
2	630	48·4	45·6	2·8	0·1	0·1	14	30 : — : —	2·0	Id.	⊙
3	622	49·7	46·0	3·7	0·1	0·0	12	28 : — : —	1·5	Id.; patches of cirri.	⊙
4	618	48·2	45·0	3·2	0·1	0·0	14	20 : — : —	0·5	Id.; id.	⊙
5	620	43·9	42·4	1·5	0·1	0·0	20		0·5	Scud; cumuli and haze on horizon; light cirri.	⊙
6	635	39·8	39·0	0·8	0·1	0·1	20	— : 22 : —	8·0	Cirro-cumulo-strati; cirri; cirro-strati.	
7	650	37·7	37·0	0·7	0·1	0·1	17		0·8	Woolly cirri; cirro-strati.	☽
8	653	37·3	36·8	0·5	0·1	0·1	18		0·0	Quite clear.	☽
9	648	34·7	34·2	0·5	0·1	0·0			0·0	Id.	☽
10	650	31·6	31·3	0·3	0·0	0·0			0·2	Woolly cirri to S.	☽
11	646	31·1	30·8	0·3	0·0	0·0	18		0·0	Faint lunar corona.	☽
12	645	30·7	30·3	0·4	0·0	0·0	18	— : 22 : —	5·5	Loose cirro-cumulo-strati.	☽
13	29·644	31·3	31·0	0·3	0·0	0·0	18	— : 22 : —	9·0	Loose cirro-cumulo-strati.	
14	636	29·3	29·0	0·3	0·0	0·0	20		0·0	Heavy dew; hoar-frost.	☽
15	636	28·0	28·0	0·0	0·1	0·0	30		0·5	Cirro-cumulo-strati to E.	☽
16	629	28·0	27·9	0·1	0·0	0·0	24		0·5	Id.	
17	628	28·7	28·7	0·0	0·1	0·0	20		0·8	Id.?	
18	636	26·8	26·8	0·0	0·0	0·0	26		0·8	Id.	
19	636	25·7	...	...	0·0	0·0	25		0·5	Cirri to E.; patch of scud to SE.	
20	646	26·3	...	...	0·0	0·0	23		0·2	Patches of scud to N.	⊙
21	641	30·7	30·1	0·6	0·0	0·0		— : 20 : —	4·0	Cirro-cumulous scud; cirro-strati.	⊙
22	646	33·3	32·0	1·3	0·1	0·0	17		2·0	Cirri; patches of scud to S.	⊙
23	651	37·7	36·9	0·8	0·1	0·0	16	19 : — : —	4·0	Loose cumuli; linear cirri; cirro-strati.	●
23 0	646	42·0	41·2	0·8	0·0	0·0	17	20 : — : —	5·0	Id.; cirri; cirro-strati.	⦶
1	635	49·3	45·9	3·4	0·4	0·4	18	20 : — : —	5·0	Id.; id.; id.	⦶
2	620	50·7	46·9	3·8	0·3	0·3	19	21 : — : —	5·0	Id.; cumuli; cirri; cirro-strati.	⦶
3	614	52·0	46·7	5·3	0·4	0·4	21	21 : 21 : —	6·0	Scud; loose cumuli; cirro-cumuli.	⊖
4	614	49·2	45·7	3·5	0·2	0·0	18	21 : 21 : —	3·5	Id.; id.; id.	⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.	
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.		
23	5	29·615	45·0	43·2	1·8	0·1	0·0	19	22 : — : —	8·0	Thick scud; fine cirri; cirro-strati; cumuli.	☽
	6	615	42·1	40·7	1·4	0·1	0·0	18	21 : — : —	7·0	Loose cirro-cumulo-strati; fibrous cirri.	
	7	620	40·5	39·6	0·9	0·1	0·0	6	21 : — : —	8·0	Id.	☽
	8	618	38·7	37·9	0·8	0·1	0·0	30		1·5	Id.	☽
	9	625	35·4	34·9	0·5	0·1	0·0	22		0·5	Id. ?	☽
	10	632	35·2	34·9	0·3	0·1	0·0	18		8·5	Cirro-cumulo-strati; corona round Moon.	☽
	11	636	34·8	34·3	0·5	0·0	0·0	8		3·0	Id.	☽
	12	631	32·0	31·7	0·3	0·0	0·0	24		0·0	Hazy on horizon.	☽
	13	29·630	30·4	30·0	0·4	0·0	0·0	20		0·0	Hazy on horizon.	☽
	14	625	30·2	...	...	0·0	0·0			0·0		☽
	15	615	28·2	...	...	0·0	0·0			0·5		☽
	16	608	28·4	...	...	0·0	0·0			...		☽
	17	608	30·1	30·0	0·1	0·0	0·0	20		6·0	Cirro-cumuli; cirro-cumulo-strati; haze on horizon.	☽
	18	610	27·7	...	...	0·0	0·0			2·0	Cirro-strati; haze round horizon.	
	19	622	28·4	28·1	0·3	0·0	0·0	18		3·0	Id.; id.	
	20	630	27·7	...	...	0·0	0·0			0·5	Id.; id.	⦶
	21	640	29·0	...	...	0·0	0·0	18		0·3	Cirri; thick haze round horizon.	☉
	22	654	32·6	31·8	0·8	0·0	0·0	20		0·3	As before.	☉
	23	654	36·2	34·7	1·5	0·0	0·0	20	— : 19 : —	1·5	Cirro-cumuli; cirro-strati; cirri; very hazy on hor.	☉
24	0	664	40·7	39·3	1·4	0·0	0·0	10	— : 19 : —	8·0	Id.; id.; very hazy on horizon.	☉
	1	648	45·0	42·6	2·4	0·0	0·0	11	— : 19 : —	8·5	Id.; woolly cirri; cir. haze; hazy on hor.	⦶
	2	654	48·2	44·8	3·4	0·1	0·1	30	— : 18 : —	8·5	Id.; cirrous haze; hazy on horizon.	⦶
	3	657	49·2	45·3	3·9	0·0	0·0	18	— : 18 : —	9·0	As before; cirro-strati; solar halo.	⊖
	4	654	48·7	45·3	3·4	0·2	0·1	7	— : 17 : —	9·0	Cirri; cirro-strati; cirrous haze.	
	5	659	44·3	42·7	1·6	0·2	0·0	18		9·0	As before.	
	6	665	38·3	37·9	0·4	0·0	0·0	18		9·0 ?	Cirri; cirrous and atmospheric haze.	☽
	7	677	35·7	35·3	0·4	0·0	0·0	17		7·0	Thin cirrous haze over the sky; faint lunar halo	☽
	8	698	35·9	35·4	0·5	0·0	0·0	18		9·5	Cirri; cirro-strati; cirrous haze.	☽
	9	704	38·9	38·2	0·7	0·0	0·0			10·0	Dense cirrous clouds and haze.	
	10	706	38·6	38·0	0·6	0·0	0·0	18		10·0	The same.	
	11	724	38·8	38·2	0·6	0·1	0·0	18		10·0	Id.	
	12	718	37·9	37·3	0·6	0·0	0·0	17		10·0	Id.	
	13	29·727	39·2	38·9	0·3	0·0	0·0	18		10·0	The same.	
	14	726	39·3	39·0	0·3	0·1	0·0	17		10·0	Id.	
	15	738	39·2	39·0	0·2	0·0	0·0	24		10·0	Id.	
	16	727	39·1	38·8	0·3	0·0	0·0	18		10·0	Id.	
	17	732	40·0	39·7	0·3	0·0	0·0	18		10·0	Id.	
	18	741	41·3	41·0	0·3	0·1	0·0	24		10·0	Id.; rain[1]	
	19	739	42·0	41·6	0·4	0·0	0·0	24		10·0	Cirro-stratous scud; cirro-strati; mist; rain[1]	
	20	749	42·5	42·2	0·3	0·0	0·0	30	2 : — : —	9·5	Thick scud; cirro-cumuli; cirro-strati; strati.	
	21	767	43·3	43·0	0·3	0·1	0·1	30	2 : 15 : —	9·8	Scud; cir.-cum. scud; cir.-cum.; cirro-strati; strati.	
	22	770	46·4	45·6	0·8	0·0	0·0	26	2 : 2 : —	9·8	Cir.-str. scud; cirro-cumuli; cirro-cumulo-strati.	●
	23	774	49·0	47·1	1·9	0·3	0·3	2	2 : 2 : —	9·9	Scud; cirro-cumulous scud; cirro-strati.	
25	0	777	49·2	47·0	2·2	0·4	0·3	1	2 : — : —	10·0	Id.; cirro-strati; cirrous haze.	
	1	784	48·3	45·9	2·4	0·4	0·1	2	2 : — : —	10·0	Scud and dense cirro-strati; drops of rain.	
	2	783	49·2	46·4	2·8	0·6	0·3	1	2 : — : —	9·6	Thick scud; cirro-cumulous scud; rain to W.	⦶
	3	778	49·3	47·2	2·1	0·5	0·4	2	2 : 8 : —	8·0	Scud; cumuli; cirro-cumuli moving very slowly.	⦶
	4	776	49·3	46·7	2·6	0·5	0·6	1	2 : 10 : —	10·0	Id.; cirro-cumulo-strati; cirro-strati.	
	5	780	45·6	44·1	1·5	1·2	0·1	2	4 : — : —	10·0	Id.; cirro-strati.	
	6	785	46·4	45·2	1·2	0·1	0·2	0		10·0	Id.	
	7	788	47·0	45·3	1·7	0·1	0·1	4		10·0	Id.	
	8	792	47·1	45·3	1·8	0·2	0·1	2		10·0	Id.; passing showers[1]	
	9	802	46·7	44·9	1·8	0·1	0·1	0		10·0	Id.	)
	10	806	46·2	44·9	1·3	0·2	0·1	0		10·0	Id.; rain$^{0·5}$	)
	11	814	46·2	45·0	1·2	0·2	0·0	1	4 : — : —	10·0	Id.; homogeneous cirro-strati; rain$^{0·2}$	)
	12	823	46·0	44·8	1·2	0·2	0·1	2	4 : — : —	10·0	As before; rain$^{1-0·2}$	)

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
25 13	29·825	45·7	44·7	1·0	0·3	0·2	1	4 : — : —	10·0	As before; rain$^{0·5}$ ⊁
14	826	46·1	45·0	1·1	0·3	0·2	2		10·0	Homogeneous cirro-strati; rain$^{0·2}$)
15	830	46·1	45·1	1·0	0·3	0·1	2		10·0	Id.; id.)
16	833	46·3	45·4	0·9	0·2	0·2	3	4 : — : —	10·0	Scud; homogeneous cirro-strati; rain$^{0·2}$)
17	840	45·9	44·9	1·0	0·3	0·1	3	4 : — : —	10·0	Id.; cirrous haze; lunar halo; stars in zenith. ⊁
18	849	45·9	44·9	1·0	0·1	0·0	4	4 : — : —	9·0	Loose scud; cir. haze; lunar halo and corona; rain$^{0·2}$ ⊁
19	867	46·3	45·0	1·3	0·2	0·2	4	4 : — : —	10·0	Id.; id.
20	889	47·0	45·4	1·6	0·3	0·2	2	4 : — : —	9·5	Id.; cirri; cirrous haze; scud on Cheviot.
21	904	47·0	45·3	1·7	0·1	0·0	4	3 : — : —	10·0	Thick scud; dense cirro-strati.
22	917	48·8	46·4	2·4	0·3	0·2	2	4 : — : —	9·5	Scud; loose cumuli; cirri.
23	932	50·0	47·0	3·0	0·7	0·9	2		8·5	Id.; id.; thin cirri over the sky. ⊖
26 0	931	50·2	47·0	3·2	0·7	0·4	2	3 : — : —	10·0	Id.; cirrous mass.
1	952	49·5	46·2	3·3	0·8	0·4	3	4 : — : —	9·5	Id.; loose cumuli; cirro-strati.
2	972	49·2	45·5	3·7	0·9	0·8	2	4 : — : —	9·9	Id.; cirro-strati.
3	980	49·0	43·8	5·2	0·9	0·9	2	3 : — : —	9·9	Id.; loose cumuli; cirri; cirro-strati.
4	994	47·3	43·3	4·0	0·7	0·4	4	— : 3 : —	7·0	Cirro-stratous scud; id.; id.
5	29·999	47·0	43·2	3·8	0·4	0·2	2	— : 3 : —	9·5	Cirro-cumulo-strati; cirro-strati.
6	30·018	46·2	42·9	3·3	0·4	0·3	2	— : 3 : —	9·5	Cirro-stratous scud.
7	026	45·0	41·4	3·6	0·7	0·2	2	— : 4 : —	3·5	Id. ⊁
8	034	44·3	41·5	2·8	0·3	0·1	3	— : 4 : —	8·2	Id.
9	047	45·6	42·7	2·9	0·2	0·1	2		10·0	Id.
10	052	46·4	43·0	3·4	0·1	0·0	3		10·0	Id.
11	057	46·4	43·0	3·4	0·2	0·0	6		10·0	Id.
12	066	46·2	43·2	3·0	0·1	0·1	4	— : 5 : —	9·9	Id. ☽
27 0	30·149	46·0	42·1	3·9	0·6	0·4	4	— : 4 : —	......	Sunday—Cloudy, principally cirro-stratous scud.
13	30·127	34·2	34·0	0·2	0·7	0·0	20		0·0	Hazy on horizon. ☽
14	118	33·7	33·5	0·2	0·0	0·1	1	— : 6 : —	4·0	Cirro-cumulo-strati; cirro-strati. ☽
15	107	32·8	32·5	0·3	0·0	0·0	20		0·2	Cirro-cumulo-strati to S.; cirro-strati to N. ☽
16	104	31·2	31·0	0·2	0·0	0·0	20	— : 6 : —	9·9	Large cirro-cumulo-strati.)
17	104	34·7	34·2	0·5	0·0	0·0	20	6 : — : —	8·5	Scud and loose cumuli. ⊁
18	098	34·0	33·8	0·2	0·0	0·0	20	6 : — : —	9·0	Id. ⊁
19	083	35·0	34·6	0·4	0·0	0·0	14	6 : — : —	9·5	Scud.)
20	094	35·0	34·7	0·3	0·0	0·0	28	5 : — : —	9·0	Id. [from it.
21	108	37·9	37·3	0·6	0·0	0·0	20	7 : 5 : —	9·5	Id.; cirro-stratous scud, with fibrous masses hanging
22	098	40·3	39·6	0·7	0·0	0·0	20	6 : — : —	9·9	Id.
23	096	43·1	42·0	1·1	0·0	0·0	22	7 : — : 26	6·0	Id.; thin cirri. ☉
28 0	080	45·0	43·4	1·6	0·0	0·0	4	— : 7 : —	9·9	Cirro-stratous scud.
1	067	46·7	44·7	2·0	0·4	0·3	7	— : 7 : —	9·8	Id.; cirri.
2	061	46·7	44·9	1·8	0·8	0·3	6	— : 8 : —	9·9	Id.; id.
3	052	46·8	45·1	1·7	0·7	0·5	10	— : 8 : —	9·9	Id.; rainbow at 2h 50m.
4	032	47·3	45·0	2·3	0·5	0·4	8	— : 10 : —	9·9	Id.; cirri.
5	031	46·5	44·7	1·8	0·6	0·1	8	— : 9 : —	9·9	Id.; id.
6	057	46·0	44·6	1·4	0·3	0·3	7		10·0	Id.
7	040	45·8	44·5	1·3	0·2	0·1	8		10·0	Id.
8	027	45·2	44·4	0·8	0·2	0·1	8		10·0	Id.
9	024	45·8	44·8	1·0	0·2	0·2	8		9·5	Scud; cirro-cumulo-strati.)
10	026	45·3	44·7	0·6	0·2	0·2	8	7 : — : —	9·9	Id.; cirro-strati; lunar corona.)
11	030	45·3	44·7	0·6	0·1	0·1	6	— : 8 : —	9·8	Cir.-str. scud; cirri; light drops of rain. ☽
12	020	45·1	44·7	0·4	0·1	0·0	6	— : 9 : —	8·0	Id.; cirri radiating from SE.; lunar corona. ⊁
13	30·010	45·2	44·9	0·3	0·1	0·0	6		10·0	Misty scud; rain$^{0·2}$
14	29·996	45·7	45·0	0·7	0·1	0·1	6		10·0	Id.
15	997	44·7	44·4	0·3	0·1	0·0	6 v.	9 : — : —	9·2	Scud; rain since last hour.
16	991	44·4	43·8	0·6	0·1	0·0	6	— : 10 : —	9·2	Cirro-stratous scud? ⊁
17	984	42·4	41·8	0·6	0·1	0·0	4	11 : — : 12	1·8	Patches of scud; cirri as at 12h; faint lunar corona. ☽
18	969	37·9	37·7	0·2	0·0	0·0	20		1·5	Linear cirri; lunar corona. ☽

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Oct. 27d 23h 30m. About this time a dense mass of thick wavy cirro-stratus and cirro-stratous scud came up from E.

Gött. Mean Time. d.	h.	BAROMETER at 32°. in.	THERMOMETERS. Dry. °	Wet. °	Diff. °	WIND. Maximum force in 1h. lbs.	10m. lbs.	From pt.	Clouds, Sc.:C.-s.:Ci., moving from pt. pt. pt.	Sky clouded. 0—10.	Species of Clouds and Meteorological Remarks.
28	19	29·965	38·9	38·4	0·5	0·0	0·0	8		3·0	Scud on horizon; linear cirri; lunar corona. ☽
	20	976	37·4	37·2	0·2	0·0	0·1	4		5·0	Id.; woolly and linear cirri.
	21	965	39·7	39·3	0·4	0·0	0·0	4	— : 10 : —	10·0	Dense cirro-stratous scud.
	22	957	42·2	41·7	0·5	0·0	0·1	2	— : 10 : —	10·0	Id.; loose cumuli.
	23	950	44·2	43·7	0·5	0·1	0·1	4	— : 10 : —	9·9	Id.; foggy. ●
29	0	939	48·1	46·7	1·4	0·3	0·2	4	11 : — : —	10·0	Scud; dense cirro-strati.
	1	918	49·4	46·7	2·7	0·7	0·3	8	11 : — : —	10·0	As before.
	2	902	49·2	45·9	3·3	0·6	0·3	10	11 : — : —	9·9	Scud; cirri; cirro-strati.
	3	893	49·0	46·0	3·0	0·6	0·6	12	11 : — : —	10·0	Cirro-stratous scud; heavy rain to E.
	4	867	48·2	45·3	2·9	0·5	0·4	9	— : 11 : 16	9·0	Id.; woolly cirri; cirro-strati.
	5	852	47·0	44·5	2·5	0·5	0·5	8	— : 11 : 17	8·5	Id.; id.; id.
	6	843	46·5	44·2	2·3	0·4	0·3	9 v.		10·0	As before.
	7	841	44·7	43·0	1·7	0·3	0·1	9		8·0	Cirro-strati; cirri; cirrous haze; stars faint.
	8	835	45·5	43·8	1·7	0·1	0·1	8 v.		9·8	As before.
	9	826	46·4	44·7	1·7	0·1	0·0	8		10·0	Scud? cirro-stati; cirri.
	10	807	45·9	44·4	1·5	0·1	0·0	8		10·0	Id.; id.
	11	788	47·0	44·9	2·1	0·3	0·3	10		10·0	Scud and cirro-strati.
	12	774	47·9	45·4	2·5	0·6	0·2	10		10·0	The same.
	13	29·755	47·9	45·4	2·5	0·3	0·3	10		10·0	The same.
	14	741	47·5	45·2	2·3	0·5	0·4	10	12 : — : —	10·0	Id. ☽
	15	728	47·5	45·1	2·4	0·7	0·4	9		10·0	Id. ☽
	16	710	47·7	45·7	2·0	0·5	0·2	10		10·0	Id.
	17	693	47·5	45·5	2·0	0·7	0·2	15		10·0	Id.
	18	691	47·6	44·9	2·7	0·4	0·3	15	12 : — : —	10·0	Scud; cirro-strati above. ☽
	19	685	48·0	45·3	2·7	0·5	0·3	15	12 : — : —	10·0	Id.
	20	679	47·7	45·7	2·0	0·3	0·2	12	12 : — : —	10·0	Id.; homogeneous cirro-strati; rain$^{0·2}$
	21	685	48·2	45·9	2·3	0·7	0·5	11	12 : — : —	10·0	Id.; id.
	22	680	48·4	46·1	2·3	1·1	1·5	13	12 : — : —	10·0	Id.; id.
	23	683	48·7	46·0	2·7	1·7	1·0	12	12 : — : —	10·0	Id.; id.
30	0	680	49·0	46·2	2·8	1·3	0·6	12	12 : — : —	10·0	Id.; rain to E.
	1	664	49·1	46·3	2·8	0·8	0·5	12	11 : — : —	10·0	Id.
	2	647	49·3	46·4	2·9	0·6	0·8	12	11 : — : —	10·0	Id.; cirro-strati.
	3	646	49·8	46·9	2·9	0·4	0·4	12	12 : — : —	10·0	Id.; id.
	4	643	49·2	46·8	2·4	0·6	0·4	14	12 : — : —	10·0	Thick scud; cumuli; cirro-strati; cirrous haze.
	5	646	48·4	46·2	2·2	0·4	0·2	13	12 : — : —	10·0	As before.
	6	649	48·0	45·0	3·0	0·4	0·3	12		9·7	Cirro-strati and cirro-cumuli.
	7	662	46·9	44·5	2·4	0·4	0·2	12		9·8	Scud; cirro-strati.
	8	663	47·8	45·0	2·8	0·4	0·3	12		9·5	Id.; id.
	9	679	48·0	45·2	2·8	0·6	0·4	13		10·0	Id.; id.
	10	689	47·9	45·6	2·3	0·7	0·3	12		10·0	Id.; id.
	11	683	47·1	45·8	1·3	0·7	0·3	12		10·0	Id.; id.
	12	680	47·3	45·4	1·9	0·7	0·5	12		10·0	Id.; id.; drops of rain.
	13	29·680	46·9	45·2	1·7	0·7	0·6	12	12 : — : —	9·5	Scud; cirro-cumulo-strati; cir.-str.; lunar corona. ☽
	14	682	47·3	45·5	1·8	0·8	0·6	12		10·0	Id.
	15	680	48·0	46·0	2·0	1·3	1·7	12		10·0	Id.
	16	678	48·0	45·8	2·2	0·9	0·8	12		10·0	Id.; cirro-strati; cirrous haze.
	17	673	47·0	45·3	1·7	1·0	0·4	11		10·0	As before.
	18	676	48·0	45·8	2·2	1·0	0·8	11		10·0	Id.; drops of rain.
	19	675	48·4	46·3	2·1	1·1	0·4	11		10·0	Id.
	20	682	47·7	46·0	1·7	0·6	0·4	12	12 : — : —	10·0	Thick scud; drops of rain.
	21	690	48·1	45·6	2·5	1·1	0·7	12	— : 12 : —	10·0	Thick wavy cirro-strati.
	22	687	48·0	46·0	2·0	0·9	0·9	12	12 : — : —	9·9	Thick scud; cirro-strati; sky to SW.
	23	682	49·6	46·1	3·5	1·5	1·2	12	12 : — : —	9·9	As before; clouds more broken.
31	0	674	50·3	46·2	4·1	1·7	1·2	12	12 : — : —	10·0	Scud; cirro-stratous scud; cirro-strati.
	1	666	50·3	46·4	3·9	1·8	0·5	12	12 : — : —	10·0	The same.
	2	651	49·3	45·8	3·5	1·6	1·4	12	12 : — : —	10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Oct. 28d 19h. Linear cirri lying from ESE. to WNW.; stratus in the valleys. 20h. A bank of scud and loose cumuli on N., E., and S. horizon moving towards N.; scud on Cheviot. 22h. The lowest scud hanging in loose ragged masses; a slight fog.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Thermometers. Wet.	Thermometers. Diff.	Wind. Maximum force in 1h.	Wind. Maximum force in 10m.	Wind. From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
31	3	29·636	48·8	45·8	3·0	2·4	1·3	12	12 : — : —	10·0	Dense scud and cirro-strati.
	4	634	48·5	45·5	3·0	1·5	0·8	12	12 : — : —	10·0	As before.
	5	627	48·2	44·9	3·3	2·2	1·2	12	12 : — : —	9·8	Scud; woolly cirri; cirro-strati.
	6	621	48·0	44·9	3·1	2·4	1·6	12	12 : — : —	9·5	Id.
	7	630	48·3	45·2	3·1	2·3	1·1	12		10·0	Id.; dark.
	8	620	48·2	44·9	3·3	2·5	1·8	12		9·8	Id.; id.
	9	618	48·3	44·9	3·4	2·4	1·3	12		10·0	Id.; id.
	10	603	48·0	44·5	3·5	1·6	1·4	10		9·5	Id.; id.
	11	588	48·1	44·7	3·4	2·2	2·2	10		10·0	Id.
	12	587	48·0	44·5	3·5	2·2	1·2	10		10·0	Id.
	13	29·585	47·7	44·0	3·7	2·0	1·5	10		10·0	Scud.
	14	581	47·3	43·6	3·7	2·1	1·3	10		10·0	Id.
	15	569	47·2	43·5	3·7	1·8	1·3	11		10·0	Id.
	16	553	46·9	43·4	3·5	2·1	1·0	10		10·0	Id.
	17	547	47·0	43·3	3·7	2·8	1·5	11		10·0	Id.
	18	542	46·8	43·4	3·4	2·0	1·4	11		10·0	Thick scud.
	19	539	46·2	42·8	3·4	1·7	1·1	10	11 : — : —	9·5	Id.; cirro-strati, tinged red.
	20	542	45·7	42·2	3·5	2·0	1·5	8	11 : — : —	9·5	Id.; id.; cirri.
	21	539	46·0	42·9	3·1	0·9	1·3	8	10 : — : —	9·8	Scud; id.; mottled cirri.
	22	534	46·6	43·1	3·5	1·9	2·2	9	10 : — : —	9·5	Id.; id.; woolly cirri. ●
	23	525	47·9	43·7	4·2	2·5	1·8	9	10 : — : —	9·5	Scud and loose cum.; woolly and mottled cir.; cir.-str.
1	0	520	47·5	43·3	4·2	2·5	1·5	9	10 : 8 : —	9·0	Id.; cirro-cumuli; cirri.
	1	495	46·5	42·2	4·3	2·8	2·0	8	10 : 12 : —	7·5	Id.; id.
	2	486	47·3	42·9	4·4	2·5	2·5	8	10 : — : —	9·0	Id.; id. ●
	3	482	46·8	42·7	4·1	2·8	1·6	10	10 : — : —	9·0	Id.; id.
	4	481	46·0	42·1	3·9	2·4	2·0	9	10 : — : —	8·5	Id.; id.
	5	476	45·2	41·4	3·8	2·1	1·9	8	10 : — : —	9·0	Thick scud; cirro-strati; cirri.
	6	463	44·6	41·1	3·5	3·6	2·2	8	9 : — : —	7·0	Loose smoky scud; cirri.
	7	457	44·1	40·8	3·3	2·8	2·9	8		3·5	Scud.
	8	457	44·6	41·2	3·4	3·7	3·5	7		4·0	Id.
	9	456	44·8	41·3	3·5	2·4	2·9	8		9·5	Id.
	10	458	45·0	41·3	3·7	3·0	2·4	9		9·8	Id.
	11	453	45·3	40·9	4·4	3·2	2·9	8		9·5	Id.
	12	451	44·9	40·6	4·3	3·0	2·3	9		9·8	Id.
	13	29·439	45·0	40·5	4·5	3·5	1·3	8	9 : — : —	9·8	Scud.
	14	431	44·7	40·3	4·4	2·5	2·6	9	9 : — : —	9·5	Id. ☽
	15	412	44·7	40·2	4·5	2·5	2·2	8		10·0	Id.
	16	406	44·7	40·0	4·7	3·5	3·8	7		10·0	Id.
	17	397	43·8	39·9	3·9	3·8	3·8	7		10·0	Id.; drops of rain.
	18	397	43·7	39·7	4·0	3·2	3·1	7		10·0	Id.; id.
	19	397	43·8	39·3	4·5	3·3	3·4	7	9 : — : —	10·0	Id.; id.
	20	401	42·6	39·7	2·9	3·6	2·9	7	8 : — : —	10·0	Id.; shower$^{0·2}$
	21	399	43·5	41·0	2·5	3·5	2·0	7	8 : — : —	9·9	Id.; rain falling to E.
	22	410	42·2	40·3	1·9	3·9	1·7	7	8 : — : —	10·0	Id.; dense cirrous mass; passing showers.
	23	418	43·8	40·7	3·1	4·3	2·5	7	8 : — : —	9·5	Loose scud; cir.-str. scud; cir.-str.; showers around.
2	0	418	44·8	40·6	4·2	3·4	2·8	7	8 : — : —	9·8	As before.
	1	422	44·8	40·6	4·2	3·4	2·7	7	8 : — : —	9·9	Id. ●
	2	421	45·3	41·7	3·6	4·8	1·8	7	8 : — : —	9·2	Id.; rain$^{0·2}$; rainbow. ⊖
	3	416	45·0	41·9	3·1	4·0	2·4	7	8 : 8 : —	9·8	Scud; cirro-stratous scud; showers around.
	4	419	45·2	40·5	4·7	3·0	2·3	7	8 : 8 : —	9·0	Id.; id.
	5	429	45·1	40·8	4·3	3·4	1·6	6	8 : — : —	10·0	Id.; id.
	6	440	44·3	41·8	2·5	2·9	1·2	5		9·8	Id.; drops of rain.
	7	458	44·9	40·5	4·4	4·0	2·0	6		9·5	Id.
	8	472	45·3	40·4	4·9	3·7	1·9	6		8·0	Id. ☽
	9	479	44·9	40·6	4·3	2·6	2·4	6		9·0	Id.
	10	494	45·0	40·7	4·3	2·2	3·0	6		8·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1^h.	10^m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
2 11	29·507	45·2	40·8	4·4	2·8	1·8	6		9·5	Scud.
12	521	45·2	40·7	4·5	2·6	2·2	6		9·8	Id.; drops of rain.
23	29·582	45·9	41·1	4·8	3·1	1·5	6	— : 7 : —	……	Sunday—Cloudy, chiefly cir.-str. scud; very showery.
3 13	29·514	42·5	40·3	2·2	2·6	0·3	6		10·0	Clouds nearly homogeneous; rain$^{0\cdot5}$
14	490	42·8	39·3	3·5	0·8	0·3	6	— : 4 : —	9·9	Cirro-stratous scud; cirro-strati; drops of rain. ☽
15	474	42·7	41·0	1·7	0·5	0·7	4		10·0	Id.; id.; id.
16	452	43·2	41·1	2·1	1·0	1·2	4		10·0	Id.; id.
17	457	43·7	40·8	2·9	1·1	0·7	4		10·0	Id.; id.
18	439	43·7	40·6	3·1	1·1	0·8	4		10·0	Id.; id.
19	430	43·7	40·9	2·8	0·9	0·8	4		10·0	Id.; id.
20	419	43·2	40·4	2·8	0·9	0·9	3	— : 5 : —	10·0	Id.; id.
21	401	42·9	40·3	2·6	1·1	1·3	3	— : 4 : —	10·0	Cirro-stratous scud.
22	391	43·3	40·2	3·1	1·2	0·9	2	— : 4 : —	10·0	Id.
23	381	43·6	40·3	3·3	1·1	0·6	2	— : 4 : —	10·0	Id.; drops of rain.
4 0	367	43·4	40·2	3·2	1·1	0·5	2	— : 4 : —	10·0	Id.; id.; rain to N. and E.
1	342	44·0	40·4	3·6	1·1	0·6	2	— : 4 : —	10·0	Id.
2	310	43·2	40·2	3·0	1·7	1·4	2	— : 4 : —	10·0	Cirro-stratous scud; loose cumuli; cirro-strati. ⊖
3	289	44·3	41·0	3·3	1·3	1·0	3	— : 4 : —	9·0	Cirro-cumuli; woolly cirri; cirro-strati; cirrous haze.
4	277	44·2	40·3	3·9	1·8	1·1	3	4 : — : —	9·0	Scud; cirro-cumuli, &c. as before.
5	258	42·6	39·4	3·2	1·2	1·0	3	— : 4 : —	10·0	Cirro-stratous scud; cirrous mass.
6	248	40·7	39·7	1·0	1·5	1·3	3		10·0	As before; rain$^{0\cdot2}$
7	229	42·0	40·4	1·6	1·5	1·0	2		10·0	Scud; id.
8	223	41·9	40·3	1·6	1·1	0·5	2		10·0	Id.; id.
9	213	43·0	41·1	1·9	0·9	0·8	2		10·0	Id.; showers$^{1-0\cdot2}$
10	205	43·8	42·3	1·5	0·9	0·8	3		10·0	Id.; drops of rain.
11	201	44·0	42·7	1·3	1·3	1·4	4		10·0	Id.; rain$^{0\cdot5}$
12	199	44·0	43·0	1·0	1·5	1·3	3		10·0	Rain^{1}
13	29·201	44·2	43·6	0·6	1·1	1·0	4		10·0	Rain^{1}
14	201	44·6	43·7	0·9	1·3	0·6	4		9·9	Rain$^{0\cdot5-2}$ since last hour.
15	210	44·1	43·6	0·5	1·0	0·5	3		9·9	Showers$^{0\cdot5-2}$; shower of hail since 14^h.
16	207	44·2	43·3	0·9	0·9	0·8	4		9·9	Scud; cirro-strati; passing showers.
17	224	43·7	43·0	0·7	1·1	0·3	5		10·0	As before.
18	227	43·7	42·9	0·8	1·0	0·4	4		10·0	Id.
19	237	43·7	42·4	1·3	0·9	0·6	4	4 : — : —	9·9	Scud; woolly cirri; showers.
20	258	44·0	42·6	1·4	1·4	0·7	4	5 : — : —	10·0	Id.; id.; id.
21	273	44·0	42·6	1·4	0·8	0·5	4	5 : — : —	10·0	Id.; showers; rain$^{1-2}$ at 21^h 10^m.
22	283	43·2	42·2	1·0	1·8	1·0	4	6 : — : —	10·0	Id.; rain^{1}
23	282	43·9	42·0	1·9	1·2	0·7	3	6 : 5 : —	10·0	Id.; cirro-stratous scud; cirro-strati.
5 0	284	44·2	42·1	2·1	1·1	0·8	3	6 : 5 : —	10·0	As before; showers, hail and rain.
1	290	42·0	40·6	1·4	2·3	1·7	4	6 : — : —	10·0	Scud; cirro-strati; rain$^{1-3}$
2	280	42·5	41·4	1·1	1·3	0·7	4	— : 7 : —	9·0	Cirro-cumulo-strati; cirro-strati; passing showers.
3	277	43·8	42·0	1·8	1·5	1·2	4	6 : 6 : —	9·0	Scud; loose cumuli; cumuli; cirri; id.
4	277	43·4	41·4	2·0	1·3	1·1	4	7 : — : —	8·0	Id.; id.; rain to S.
5	285	42·3	41·0	1·3	1·0	0·8	4	6 : — : 3	9·8	Id.; woolly cirri.
6	293	42·9	41·8	1·1	0·9	0·6	4		10·0	Rain^{1}
7	304	43·6	42·0	1·6	1·0	1·2	4		10·0	Rain$^{1-2}$
8	310	42·8	42·0	0·8	1·2	0·1			10·0	Rain^{1}
9	315	42·8	41·3	1·5	1·1	0·8	4		9·9	Scud, &c.; showers.
10	323	42·7	41·3	1·4	1·6	0·7	4		10·0	Id.
11	329	41·8	40·2	1·6	0·9	0·7	4		4·0	Id.; showers.
12	322	41·9	40·2	1·7	0·5	0·7	4		3·5	Id.; id.
13	29·307	42·3	41·6	0·7	0·6	0·5	4		10·0	Scud; rain^{1}
14	295	43·0	42·4	0·6	0·8	0·5	4		10·0	Id.; id.
15	287	43·3	42·9	0·4	0·6	0·9	4		10·0	Id.; id.
16	279	43·7	42·7	1·0	1·1	0·7	4		10·0	Id.; rain$^{0\cdot5}$

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
5 17	29·275	43·2	42·2	1·0	1·1	0·6	5		10·0	Scud; rain^{1}
18	273	43·0	42·0	1·0	1·0	0·8	3		10·0	Id.; rain^{2}
19	266	42·1	41·4	0·7	2·0	0·7	3		9·9	Id.; cirro-strati.
20	267	42·7	41·9	0·8	1·0	0·8	4	6 : — : —	10·0	Id.; cirri; cirro-strati; showers.
21	270	43·7	42·4	1·3	1·3	0·8	4	6 : — : —	10·0	Id.; id.; id.; rain$^{0·2}$
22	257	44·4	43·2	1·2	1·6	1·3	4	6 : — : —	10·0	The same.
23	256	43·9	42·6	1·3	3·1	1·4	4	6 : — : —	10·0	Id.; rain^{1}
6 0	210	42·7	42·3	0·4	3·0	1·1	4	6 : — : —	10·0	Scud; rain$^{0·5}$
1	222	42·9	42·3	0·6	2·5	2·2	3		10·0	Id.; rain^{1}
2	196	43·2	42·3	0·9	3·0	2·0	4	5 : — : —	10·0	Id.; rain$^{0·5}$
3	175	43·9	43·0	0·9	3·0	1·3	4	5 : — : —	10·0	Id.; rain^{2}
4	166	44·0	43·0	1·0	3·4	2·3	4		10·0	Id.; id.
5	151	44·3	43·2	1·1	3·7	3·6	4		10·0	Id.; id.
6	159	43·9	43·2	0·7	4·5	1·9	4		10·0	Id.; rain^{3}
7	163	44·3	43·6	0·7	2·7	1·4	4		10·0	Id.; rain^{2}
8	165	44·7	43·9	0·8	2·7	2·3	4		10·0	Id.; id.
9	170	44·8	44·2	0·6	2·5	1·5	4		10·0	Id.; id.
10	170	45·2	44·7	0·5	2·5	1·1	6		10·0	Id.; rain$^{2-3}$
11	177	44·7	44·0	0·7	1·1	1·2	6		10·0	Id.; rain$^{1-2}$
12	181	44·6	43·9	0·7	1·5	0·4	6		10·0	Id.; rain^{1}
13	29·177	44·1	43·6	0·5	0·7	0·2	6		10·0	Scud; rain$^{0·5}$
14	177	43·7	43·1	0·6	0·3	0·2	6		10·0	Clouds more broken; rain ceased.
15	193	42·9	42·4	0·5	0·2	0·1			9·8	Scud; cirro-strati; cirri?
16	184	42·7	42·3	0·4	0·2	0·2			3·5	Id.; id.
17	193	41·9	41·6	0·3	0·1	0·0			1·5	Id.; cirri. ☽
18	197	40·8	40·5	0·3	0·0	0·0	5	4 : — : —	1·5	Id.; id. ☽
19	204	40·8	40·4	0·4	0·2	0·1	0	8 : — : —	6·0	Id.; cirro-strati. ☽
20	220	40·4	40·0	0·4	0·2	0·1	6	8 : — : —	9·9	Id.; cumulo-strati; cirro-strati.
21	229	41·5	41·0	0·5	0·1	0·1		8 : — : —	9·9	Id.; cirro-strati.
22	239	42·7	42·0	0·7	0·0	0·0	4		9·9	Id.; id.; cumulo-strati to E. and N.
23	253	43·5	42·8	0·7	0·1	0·2	8	— : 9 : —	9·8	Cir.-str. scud; cir.-str.; id.
7 0	265	45·0	43·8	1·2	0·1	0·1	10	10 : — : —	9·9	Scud; cirro-stratous scud; cirro-strati.
1	263	45·5	43·3	2·2	0·1	0·1	4	10 : — : —	9·9	Id.; id. id.
2	259	46·0	43·7	2·3	0·2	0·0	4	10 : — : —	9·9	The same.
3	254	45·2	43·4	1·8	0·1	0·1	4	10 : — : —	9·9	Id.
4	256	44·7	43·4	1·3	0·1	0·1	4	10 : — : —	9·9	Id.; sky to NW.
5	254	44·3	43·0	1·3	0·2	0·2	4	10 : — : —	9·5	Scud; cir.-str. scud; cum.-str.; stratous scud to N.
6	249	42·8	41·9	0·9	0·1	0·1	6		9·5	As before; shower$^{0·5}$
7	255	42·4	41·9	0·5	0·1	0·0			10·0	Overcast; dark; rain$^{0·5}$
8	257	40·4	40·2	0·2	0·0	0·0			1·5	Cirro-stratous scud?
9	265	37·1	36·8	0·3	0·0	0·0			0·5?	Scud on horizon; foggy.
10	267	35·9	35·7	0·2	0·0	0·0			1·8	Cirro-stratous scud; fog nearly away.
11	257	34·2	34·0	0·2	0·0	0·0			3·0	Cirro-strati; foggy.
12	251	35·6	35·3	0·3	0·0	0·0			10·0	Overcast; fog gone off.
13	29·245	36·9	36·6	0·3	0·0	0·0			10·0	Overcast; foggy.
14	232	38·3	38·0	0·3	0·0	0·0			9·5	Cirro-strati.
15	215	38·9	38·6	0·3	0·0	0·0			9·5	Id.
16	203	39·0	38·8	0·2	0·1	0·0			7·0	Thin clouds; drops of rain.
17	187	39·0	38·8	0·2	0·0	0·0			6·0	Id.
18	172	39·9	39·6	0·3	0·0	0·0			8·0	Id.
19	160	41·0	40·8	0·2	0·2	0·2	6	10 : — : —	9·5	Scud; cirro-strati; cirri.
20	152	41·6	41·2	0·4	0·2	0·2	4	8 : 10 : —	10·0	Stratous scud; cirro-stratous scud; cirri.
21	150	42·0	41·7	0·3	0·2	0·1	4	— : 10 : —	10·0	Cirro-stratous scud; rain$^{0·5}$
22	136	45·2	44·7	0·5	0·4	0·3	4	— : 8 : —	10·0	Id.; cirro-strati; rain^{1}
23	115	46·7	46·1	0·6	0·4	0·4	4	8 : 10 : —	10·0	Misty scud; cirro-stratous scud; cirrous mass.
8 0	095	47·7	46·9	0·8	0·5	0·5	5	8 : 9 : —	10·0	Id.; id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
8	1	29·059	48·3	47·0	1·3	1·0	0·8	6	8 : 9 : —	9·8	As before.
	2	030	48·9	47·5	1·4	0·9	0·6	6	8 : 9 : —	10·0	Id.; drops of rain.
	3	29·002	48·3	46·9	1·4	0·9	0·5	6	7 : — : —	10·0	Misty scud; cirro-stratous scud; cirrous mass.
	4	28·986	47·9	46·5	1·4	1·1	0·7	5	7 : — : —	10·0	As before; rain$^{0·2}$
	5	941	47·6	46·2	1·4	1·1	0·3	5	7 : — : —	10·0	Scud.
	6	930	47·0	46·0	1·0	0·8	0·7	6		10·0	Rain$^{1·2}$
	7	904	46·9	46·1	0·8	1·4	1·1	4		10·0	Rain^{1}
	8	887	46·9	46·0	0·9	1·4	0·6	6		10·0	Id.
	9	865	46·5	45·9	0·6	0·6	0·3	6		10·0	Dark; rain$^{0·5}$
	10	850	47·0	46·3	0·7	0·4	0·2			10·0	Id.
	11	839	46·8	46·3	0·5	0·2	0·2			10·0	Scud; dark.
	12	824	47·0	46·4	0·6	0·3	0·1			10·0	Id.; id.; rain$^{0·5}$
	13	28·803	47·2	46·7	0·5	0·3	0·3			10·0	Scud; dark; rain$^{0·5}$
	14	797	46·7	46·1	0·6	0·5	0·4			10·0	Id.; id.
	15	789	46·0	45·0	1·0	0·6	0·3	4		10·0	Id.; id.
	16	767	45·2	44·8	0·4	0·5	0·4			10·0	Id.; id.; rain$^{0·5}$
	17	751	44·7	44·0	0·7	0·5	0·3			10·0	Id.; id.
	18	739	44·3	43·8	0·5	0·2	0·1			10·0	Id.; id.
	19	715	44·3	43·4	0·9	0·1	0·0			9·7	Cirro-stratous scud.
	20	711	44·0	43·3	0·7	0·1	0·0			9·8	Scud; cirro-strati; cirri; red to NE.
	21	713	44·4	43·9	0·5	0·1	0·0	20	0 : — : —	9·8	Misty scud; cirrous scud; cirro-strati; woolly cirri.
	22	716	45·9	45·0	0·9	0·0	0·0	17		9·5	Cirro-strati, cirri, scarcely moving.
	23	718	47·4	45·7	1·7	0·1	0·0	28	28 : St· : —	9·9	Scud; cirro-strati; cirri.
9	0	712	47·2	45·3	1·9	0·3	0·2	28	25 : 0 : 0	9·8	Id.; id.; woolly cirri.
	1	700	49·0	46·1	2·9	0·1	0·0	24	— : 2 : —	9·9	Cirro-strati; cirro-cumuli; cirri; patches of scud. ●
	2	697	49·6	45·9	3·7	0·1	0·0	22	24 : — : —	9·8	Patches of scud; cirro-strati; loose cirro-cumuli. ⊖
	3	700	49·0	46·0	3·0	0·2	0·0		21 : — : —	9·8	Loose scud; cirro-strati; cirro-cumuli.
	4	711	47·3	44·6	2·7	0·1	0·0	23	22 : 22 : —	9·7	Scud; cirro-stratous scud; id.
	5	715	45·9	44·0	1·9	1·0	0·0	20	22 : — : —	9·8	Id.; red to W.
	6	732	44·8	42·3	2·5	0·2	0·1	20		9·7	Id.; id.
	7	742	43·2	41·5	1·7	0·1	0·1			9·9	
	8	746	42·5	40·9	1·6	0·1	0·1			10·0	Scud; dark.
	9	760	42·9	41·5	1·4	0·1	0·0			10·0	Id.; id.; drops of rain.
	10	763	41·7	41·0	0·7	0·0	0·0			9·5	Id.; cirro-strati; stars very dim.
	11	765	41·7	40·9	0·8	0·1	0·1			9·8	Cirro-strati; cirrous haze; stars very dim.
	12	776	41·4	40·7	0·7	0·1	0·0	14		6·5	As before.
10	0	28·831	45·5	44·0	1·5	0·0	0·0		— : 20 : —	......	Sunday—Cloudy; A.M. cir.-cum. scud; P.M. cirro-stratous scud; rain^{1} at 2h.
	13	28·796	41·7	41·2	0·5	0·1	0·0			10·0	Cirro-stratous scud.
	14	792	41·6	41·1	0·5	0·0	0·0			9·8	Id.
	15	796	41·8	41·1	0·7	0·0	0·0			10·0	Id.
	16	790	40·3	40·0	0·3	0·0	0·0			8·5	Stars dim.
	17	798	39·5	39·1	0·4	0·0	0·0			10·0	
	18	803	39·8	39·4	0·4	0·0	0·0			10·0	
	19	808	39·0	38·6	0·4	0·0	0·0	20	— : 7 : —	3·0	Cirro-stratous scud, cir.-cum.-str., very slow motion.
	20	821	36·1	35·9	0·2	0·1	0·0	18	26 : 28 : —	7·0	Scud, quickly; cir.-cum. scud; cirro-strati; cirri.
	21	834	38·7	38·2	0·5	0·2	0·1	23	25 : — : —	9·0	Scud; id.; id.
	22	846	42·9	40·8	2·1	0·3	0·4	26	26 : — : —	8·5	Id.; loose cumuli; cirro-strati; cirri.
	23	864	42·3	40·0	2·3	0·4	0·4	24	26 : — : —	10·0	Id.; cirro-strati.
11	0	876	42·0	39·7	2·3	1·0	0·7	24	26 : — : —	10·0	Id.; cirrous mass.
	1	885	41·0	39·2	1·8	1·3	0·7	24	26 : — : —	10·0	Loose scud; cirrous mass; rain$^{0·5}$
	2	900	42·0	39·6	2·4	1·2	1·2	25	26 : — : —	10·0	Id.; cirro-strati; cirrous mass.
	3	914	44·0	39·9	4·1	3·3	1·5	25	26 : — : —	9·8	Id.; id.; id.
	4	931	43·4	39·3	4·1	1·9	2·7	24	— : 26 : 15	7·0	Cir.-str. scud; nimbi; woolly cir.; cir.-str.; rainbow. ⊙
	5	933	40·4	36·9	3·5	2·4	2·0	23		1·8	Cirro-stratous scud; cir.-str. on horizon; sky milky.
	6	932	39·2	35·0	4·2	1·7	1·2	24		1·5	Cirro-cumuli; cirro-strati near horizon.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Nov. 8d 5h. Observation made at 5h 10m.

Nov. 11d 4h. A chain of cirro-stratus, extending from NNW. to NE. in the form of bags below, and a sheet of cirrus above; the bags rather inclining to E.; depth about 7°.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
11	7	28·944	37·8	34·0	3·8	1·1	0·8	22		0·5	Cirro-strati to N.; faint aurora.
	8	953	38·1	33·6	4·5	1·7	0·5	21		0·8	Id.; id. [aurora.
	9	956	35·8	33·6	2·2	0·5	0·5	20		0·8	Id.; patches of thin clouds; very faint
	10	958	35·4	33·2	2·2	0·6	0·3	21		0·5	Cirro-strati; faint auroral light.
	11	969	36·3	34·7	1·6	0·7	0·2	20		0·5	Id.; id.
	12	970	37·0	34·0	3·0	0·4	0·5	22		1·0	Id.; id.; scud to SE.
	13	28·973	37·9	35·4	2·5	1·6	1·0	21		4·0	Dense clouds to N. and S.; hazy.
	14	983	40·7	37·7	3·0	2·6	1·8	22		9·9	Auroral light seen through break to N.
	15	28·993	40·2	37·8	2·4	2·5	1·5	23		9·0	Scud; drops of rain.
	16	29·012	40·3	38·0	2·3	1·2	0·8	24		10·0	Id.; dark; showers$^{0\cdot5}$
	17	030	40·7	39·2	1·5	0·7	0·7	23		10·0	Id.; rain$^{0\cdot5}$
	18	048	40·9	38·3	2·6	0·7	0·4			10·0	Id.
	19	068	39·9	37·7	2·2	0·7	0·3	23		9·5	Sky to N.
	20	091	39·8	37·7	2·1	0·2	0·0	22		9·9	Cirro-stratous scud; cirro-strati.
	21	109	40·0	38·1	1·9	0·2	0·1	21		10·0	Homogeneous cirro-strati, broken to N.
	22	120	41·5	39·5	2·0	0·2	0·2	18		10·0	Id.
	23	129	41·9	39·6	2·3	0·2	0·1	22		10·0	Cirro-stratous scud; cirro-strati.
12	0	119	42·7	40·2	2·5	0·2	0·1			10·0	Cirro-cumuli; cirro-strati; cirrous haze; faint halo. ☽
	1	120	43·6	40·7	2·9	0·2	0·1	19		10·0	As before; haze becoming thicker; id.
	2	105	43·5	41·0	2·5	0·2	0·1	20	— : 22 : —	10·0	Thick semifluid cirro-strati.
	3	098	42·6	40·6	2·0	0·1	0·0	16		10·0	Dense wavy cirro-strati and haze.
	4	092	41·7	40·0	1·7	0·0	0·0	14		10·0	Dense homogeneous cirro-strati and haze.
	5	085	40·0	38·1	1·9	0·1	0·0	16		10·0	Dense homogeneous mass; rain^{1}
	6	089	37·8	36·9	0·9	0·2	0·1			10·0	Nearly as before; rain$^{0\cdot2}$
	7	065	37·0	36·2	0·8	0·2	0·0			10·0	Id.
	8	046	37·6	36·9	0·7	0·2	0·1			10·0	Id.
	9	041	38·2	37·2	1·0	0·0	0·0			10·0	Id.; dark.
	10	048	38·3	37·7	0·6	0·1	0·1			10·0	Id.; id. [9·0.
	11	052	38·5	37·7	0·8	0·0	0·0	18	— : 24 : —	3·0	Cir.-str. scud; sky clouded at 10h 57m, 9·8; 11h 10m,
	12	057	42·0	41·3	0·7	0·2	0·2	18	24 : — : —	9·9	Scud; cirro-stratous scud.
	13	29·075	44·3	43·3	1·0	0·4	0·4	22		10·0	Scud; rain^{1}
	14	100	44·3	43·3	1·0	0·2	0·2	21		10·0	Id.; id.
	15	115	44·0	43·0	1·0	0·3	0·4	21		10·0	Id.; raining till lately.
	16	128	43·1	42·0	1·1	0·3	0·0			9·9	Id.
	17	132	43·1	42·4	0·7	0·0	0·0			10·0	Id.; showers.
	18	142	43·0	42·3	0·7	0·0	0·0			9·2	Cirro-stratous scud; scud; stars dim.
	19	154	42·5	42·0	0·5	0·0	0·0	21		10·0	Id.; id.
	20	166	41·7	41·2	0·5	0·0	0·0	16	24 : — : —	10·0	Scud; cirro-strati; cirrous mass.
	21	190	42·1	41·6	0·5	0·1	0·0	4	6 : 22 : —	10·0	Misty scud; scud; cirro-strati.
	22	203	41·2	40·2	1·0	0·2	0·3	4	— : 21 : —	10·0	Cirro-stratous scud; scud; cirro-strati.
	23	213	41·0	40·2	0·8	0·2	0·2	4	5 : 22 : —	10·0	Scud; rain$^{0\cdot2}$
13	0	217	41·0	40·6	0·4	0·2	0·2	4	5 : — : —	10·0	Id.; id.
	1	215	41·1	40·6	0·5	0·2	0·1	4		10·0	Nearly homogeneous; rain$^{0\cdot2}$
	2	216	41·8	41·1	0·7	0·2	0·0	4		10·0	Id.
	3	232	42·8	42·1	0·7	0·1	0·1	2	— : 4 : —	10·0	Cirro-stratous scud; cirrous mass; rain$^{0\cdot2}$
	4	256	42·5	42·0	0·5	0·0	0·0	14	— : 20 : —	10·0	Id.; id.; rain$^{1\cdot5}$
	5	266	41·3	41·0	0·3	0·0	0·0	20	20 : 20 : —	9·9	Scud; cirro-cumulo-strati; cirro-strati.
	6	275	40·8	40·6	0·2	0·1	0·2	18 v.		9·2	Id.; id.
	7	301	46·7	45·6	1·1	0·5	0·3	18		9·0	Id.; 6h 58m shower^{1} and overcast.
	8	323	46·9	45·5	1·4	0·5	0·3	20		10·0	Id.; shower$^{0\cdot8}$
	9	351	46·7	45·2	1·5	0·5	0·5	19		9·8	Id.; showers at intervals.
	10	376	46·3	45·2	1·1	0·4	0·3	19		8·0	Id.; id.
	11	401	46·4	45·1	1·3	0·5	0·4	20		9·8	Id.; rain$^{0\cdot2}$
	12	425	46·7	45·6	1·1	1·0	0·8	20		10·0	Id.; rain$^{0\cdot5}$
	13	29·444	44·8	43·7	1·1	1·4	0·6			0·5	Scud.

Nov. 12d 0h. Snow lying on Cheviot. 1h. The haze has a spotted woolly appearance, with fine lined or undulating cirro-strati interspersed.

Nov. 13d. A new vane erected, composed of four feathers from a turkey's tail; the vane is connected with an index by means of a light fir rod, which shows the direction on a compass card fixed on the ceiling; the direction of the wind is generally taken from this vane in future.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
13 14	29·471	46·6	44·6	2·0	1·7	0·6	19		9·0	Scud.
15	507	46·0	44·7	1·3	0·9	0·1	24		9·9	Id.
16	541	45·3	43·8	1·5	0·5	0·3	28		10·0	Id.; drops of rain.
17	590	40·8	39·3	1·5	0·4	0·4	28		3·5	Id.
18	644	40·6	39·6	1·0	0·9	0·1	22		10·0	Id.
19	678	40·2	39·5	0·7	0·2	0·0	18	28 : — : —	9·5	Id.
20	717	39·4	38·8	0·6	0·0	0·0	17	3 : — : —	5·0	Misty and cirro-stratous scud; cirri.
21	758	39·9	39·0	0·9	0·0	0·1	17	3 : 26 : —	9·5	Id. cirro-cumulo-strati.
22	801	42·1	41·1	1·0	0·0	0·0	30	4 : — : —	9·9	Misty scud; cirro-cumuli; cirro-strati.
23	824	44·1	42·7	1·4	0·1	0·1	12 v.	— : 6 : —	9·9	Cirro-stratous scud.
14 0	846	44·7	42·3	2·4	0·1	0·1	4		10·0	Id.
1	855	45·2	41·2	4·0	0·1	0·2	8	— : 6 : —	10·0	Id.
2	879	45·5	41·4	4·1	0·2	0·1	7	— : 6 : —	9·9	Id.
3	878	45·1	41·1	4·0	0·2	0·1	6	— : 6 : —	9·9	Id.
4	886	44·3	41·0	3·3	0·1	0·1	7	— : 7 : —	9·8	Id.; cirro-strati.
5	905	43·6	40·6	3·0	0·1	0·0	6	— : 8 : —	9·9	Id.
6	906	42·5	40·3	2·2	0·0	0·0	10		10·0	Id.
7	907	42·0	40·0	2·0	0·0	0·0	11		10·0	Id.
8	902	41·6	39·4	2·2	0·1	0·0			9·8	Id.
9	898	38·1	37·0	1·1	0·0	0·0			2·5	Thin clouds; stars dim.
10	889	37·9	36·8	1·1	0·0	0·0	3		2·0	Id.; id.
11	882	35·6	35·0	0·6	0·0	0·0	0		2·0	Id.; id.
12	845	36·9	36·0	0·9	0·0	0·0	27		10·0	Dark.
13	29·810	38·1	37·3	0·8	0·0	0·0	9		10·0	Dark.
14	771	43·7	41·8	1·9	0·2	0·3	12		10·0	Very dark.
15	715	44·8	43·2	1·6	0·3	0·3	15		10·0	Id.
16	655	45·0	43·6	1·4	0·2	0·0	20		10·0	Id.
17	597	46·1	45·1	1·0	0·5	0·5	17		10·0	Id.; rain$^{0\cdot2}$
18	536	46·9	46·0	0·9	0·5	0·2	22		10·0	Scud; shower^{2} since last observation.
19	475	50·7	50·1	0·6	1·0	0·7	18		10·0	Rain^{2}
20	414	53·7	53·0	0·7	2·2	1·9	18	19 : — : —	10·0	Scud; rain$^{1-3}$
21	393	54·7	53·3	1·4	4·0	3·0	19		10·0	Id.; rain$^{1-2}$
22	393	54·1	52·9	1·2	4·0	2·3	18	20 : — : —	10·0	Id.; id.
23	425	51·7	50·1	1·6	3·4	0·6	19		10·0	Rain$^{2-5}$ since 22h.
15 0	434	51·9	50·1	1·8	0·8	0·4	19	21 : 22 : —	10·0	Scud; cirro-stratous scud; fair since 22h 30m.
1	417	52·1	49·0	3·1	2·5	2·8	22	24 : 22 : 22	7·5	Id.; cirro-cumulous scud; cirri; cirro-strati. ⊖
2	448	54·0	50·0	4·0	2·9	1·4	23	23 : 22 : —	7·0	Id.; cirro-strati, &c. ⊙
3	459	51·8	47·1	4·7	2·7	0·8	21	23 : — : 22	5·0	Id.; woolly cirri; cirro-strati. ⊖
4	470	51·2	46·9	4·3	2·6	1·3	20	24 : — : —	7·5	Id.; cirro-strati, &c.
5	485	51·3	46·7	4·6	2·1	1·4	20	24 : — : —	10·0	Id.
6	509	51·1	46·3	4·8	4·5	2·5	21		2·0	Id.; cirro-strati; cirri; lunar corona. ☽
7	514	51·2	46·9	4·3	2·2	1·8	20		3·5	Id.; id.
8	517	51·7	47·7	4·0	2·5	2·0	20		10·0	Id.
9	541	51·2	48·1	3·1	3·3	1·9	20		4·0	Id.; stars dim. ☽
10	584	50·2	47·2	3·0	1·7	1·0	21		4·0	Id.; id.
11	603	50·7	47·4	3·3	1·6	1·8	21		2·0	Id.; cirri; stars dim.
12	629	51·2	48·3	2·9	2·6	0·8	21		8·0	Id.
13	29·647	51·4	49·3	2·1	1·2	0·5	21		10·0	Scud; rain$^{0\cdot2}$, just commenced.
14	684	50·8	48·7	2·1	1·1	0·7	21		5·5	Id.
15	708	50·1	48·2	1·9	0·9	0·3	21		5·8	Id.
16	737	50·8	48·6	2·2	0·4	0·2	14		9·2	Id.
17	750	51·7	49·1	2·6	1·3	1·0	20		7·0	Id.
18	774	52·7	50·1	2·6	1·6	0·9	20		9·8	Id.
19	784	51·8	49·7	2·1	1·2	0·8	20		9·5	Id.; cirro-cumuli; cirro-strati.
20	792	52·2	50·0	2·2	1·5	0·5	19	26 : — : —	10·0	Id.; id.; id.
21	814	50·0	48·2	1·8	0·9	0·5	19	23 : 25 : —	10·0	Loose scud; cirro-stratous scud.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
15	22	29·841	50·4	48·7	1·7	1·2	1·1	18	25 : — : —	9·5	Loose scud; cirro-stratous scud.
	23	857	51·3	49·2	2·1	1·3	1·2	20	22 : 26 : —	9·8	Scud; cirro-cumulous scud; cirro-strati.
16	0	876	53·4	50·0	3·4	1·7	0·8	20	— : 26 : —	8·0	Id.; id.; id.
	1	878	53·4	49·9	3·5	1·5	0·9	22	20 : 26 : —	8·0	Id.; cirro-cumulo-strati; id.; cirri.
	2	867	53·0	49·8	3·2	1·8	1·1	20	22 : 24 : —	9·0	Loose scud; cirro-cumuli; cirri; cirro-strati.
	3	857	51·2	48·3	2·9	0·7	0·4			8·0	Scud; fine cirro-strati.
	4	861	51·0	48·2	2·8	0·2	0·4	19		9·5	Fine cir.-cum.; linear cirri below; piles of cir.-str.
	5	885	50·3	48·0	2·3	1·0	0·8	18		9·8	Cirro-cumuli; wavy cirro-strati tinged red.
	6	898	49·7	47·2	2·5	1·7	0·9	19		9·8	Cirro-strati; cirri; cirro-cumuli.
	7	909	50·0	47·6	2·4	1·3	0·5	20		9·9	As before.
	8	917	48·7	46·4	2·3	1·5	1·3	21		8·8	Cirri; lunar corona.
	9	900	48·0	45·7	2·3	1·5	1·4	20		5·5	Id.; cirro-strati; lunar corona.
	10	904	48·4	46·6	1·8	1·5	1·0	20		9·9	Id.; id.; cirrous haze; auroral light?
	11	888	50·2	48·7	1·5	1·1	1·1	20		4·0	Cirro-strati, cirri, and scud; aurora.
	12	901	51·1	49·9	1·2	1·6	1·0	20		10·0	Thick cirro-strati; auroral light on N. horizon?
17	1	29·954	54·8	52·2	2·6	2·0	0·9	20	20 : 24 : —	......	Sunday—Cloudy; patches of loose scud; cirro-strati, cirro-cumuli.
	13	29·875	50·4	47·0	3·4	2·8	0·8	20		1·0	Clouds on horizon.
	14	851	49·3	46·3	3·0	1·7	2·3	18		1·0	Id.
	15	855	49·3	46·5	2·8	2·5	1·2	20		1·0	Id.
	16	859	49·1	46·8	2·3	1·7	1·2	20		0·5	Clouds on E. horizon.
	17	863	48·8	47·2	1·6	1·2	0·4	18		5·0	Scud.
	18	859	50·4	48·8	1·6	1·6	1·1	20		10·0	Id.
	19	847	50·9	48·8	2·1	2·9	1·6	19		9·9	Loose scud.
	20	841	50·6	48·6	2·0	2·0	1·3	20	21 : — : —	9·8	Id.
	21	863	50·7	48·5	2·2	2·8	1·0	20	20 : — : —	9·9	Id.; cumuli on SE. horizon.
	22	858	51·2	49·0	2·2	2·4	1·9	20	20 : — : —	9·9	Id.
	23	859	52·0	49·2	2·8	2·3	1·3	19	20 : — : —	9·8	Id.
18	0	859	51·9	48·9	3·0	3·2	1·1	20		9·9	Id.
	1	833	52·0	49·2	2·8	1·8	2·4	20	20 : — : 20	9·5	Scud; cirro-stratous scud; woolly cirri.
	2	828	51·0	48·2	2·8	2·3	2·2	20	20 : 20 : —	9·8	Id.; cirro-strati; cirro-cumuli.
	3	817	51·0	48·2	2·8	2·0	0·1	20	20 : — : —	9·8	Id.
	4	797	50·9	48·0	2·9	1·5	0·6	22	20 : — : —	9·8	Id.
	5	768	50·1	47·6	2·5	1·0	2·1	20	20 : — : —	4·0	Loose scud; cirro-stratous scud; thin cirri to W.
	6	767	50·5	47·9	2·6	4·3	4·2	20	20 : — : —	10·0	Id.; id.
	7	772	50·4	48·0	2·4	2·4	1·8	20		10·0	Scud; cirro-strati.
	8	759	50·4	47·9	2·5	2·3	2·0	20		10·0	Id.
	9	770	50·7	48·4	2·3	1·5	1·1	18		10·0	Id.
	10	764	51·3	48·9	2·4	1·3	0·8	20		10·0	Id.
	11	759	51·4	49·0	2·4	1·2	1·5	20		10·0	Id.; a few light drops of rain.
	12	744	51·6	49·2	2·4	2·7	2·3	19		10·0	Id.
	13	29·722	51·4	49·0	2·4	4·0	2·2	19		10·0	Scud.
	14	718	51·6	49·4	2·2	2·4	2·0	19		9·0	Cirro-stratous scud?
	15	732	51·7	49·6	2·1	2·3	1·8	20		9·5	Scud; drops of rain.
	16	736	51·8	49·8	2·0	1·8	1·7	20		10·0	Id.; id.
	17	744	51·5	49·7	1·8	1·4	1·2	20		10·0	Id.
	18	746	51·2	49·8	1·4	1·5	1·1	19		9·8	Id.; rain$^{0·2}$
	19	762	51·7	50·0	1·7	1·3	0·5	20		10·0	Id.
	20	782	51·7	50·3	1·4	0·5	0·5	20	21 : — : —	10·0	Id.
	21	795	50·6	49·9	0·7	0·5	0·4	20	22 : 22 : —	8·0	Patches of scud; cirro-strati; cirro-cumuli; cirri.
	22	816	51·2	50·3	0·9	0·5	0·2	20	20 : 22 : —	9·5	Scud; cirro-cumuli; cirro-strati; cirri.
	23	837	51·0	50·2	0·8	0·2	0·1	22	20 : 22 : —	9·5	As before.
19	0	841	51·8	50·2	1·6	0·2	0·1	22	— : 21 : —	9·0	Cirro-cumulous scud; loose scud on S. hor.; cir.-str.
	1	846	53·0	50·8	2·2	0·0	0·1	20	— : 21 : —	8·5	Id.; loose scud and cumuli.
	2	856	53·0	50·0	3·0	0·1	0·1	1	— : 21 : —	9·0	Id.; id.
	3	853	51·2	49·0	2·2	0·1	0·1	31	20 : 20 : 20	8·5	Scud; loose cumuli; woolly cirri; cirro-strati.

Nov. 15d 23h 35m. Several thin sheets of dark reticulated and arborescent cloud below the cirro-cumulous scud.
Nov. 16d 3h. Thick mass of fine cirro-cumuli, with streaks of linear cirri below, and tiers of cirro-strati, 5 or 6 in an isolated pile; cirro-strati in wavy and mottled bands to S.
Nov. 17d 1h. Observation made at 1h 30m.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
19 4	29·865	49·4	48·0	1·4	0·2	0·0		— : 19 : —	9·0	Cirro-stratous scud; cirri; cirro-strati.
5	858	47·0	46·2	0·8	0·1	0·1	16 v.		9·9	Id.; id.
6	853	47·1	46·4	0·7	0·0	0·0	26		10·0	As before.
7	848	46·8	45·9	0·9	0·0	0·0	30		10·0	Cirro-strati; cirri.
8	834	47·3	46·7	0·6	0·1	0·0	2		10·0	Homogeneous; rain$^{0·8}$
9	809	47·3	46·8	0·5	0·0	0·0	0		10·0	Id.; rain$^{0·2}$
10	785	47·7	47·2	0·5	0·0	0·0	30		10·0	Cirro-strati? clouds broken; rain$^{0·5}$
11	738	50·1	49·6	0·5	0·1	0·1	16		10·0	Id.; id.; rain$^{0·2}$
12	727	51·3	50·4	0·9	0·4	0·1	26		10·0	Id.; id.
13	29·699	50·6	49·9	0·7	0·4	0·0			10·0	Thick scud; cirro-strati; clouds broken.
14	676	51·1	50·1	1·0	0·5	0·3	16		10·0	The same.
15	662	51·3	50·1	1·2	0·7	0·2	16		10·0	Id.; dark.
16	645	50·6	49·3	1·3	0·7	0·5	18		10·0	Id.; id.; rain$^{0·2}$
17	622	50·7	49·5	1·2	1·0	0·3	17		10·0	Id.; id.; id.
18	600	52·0	50·4	1·6	1·0	0·9	19		10·0	Id.; id.; id.
19	606	52·2	50·7	1·5	2·0	1·0	20		10·0	Scud and cirro-strati.
20	635	52·2	50·5	1·7	0·9	0·1	24	25 : — : —	10·0	Scud; cirro-strati.
21	671	52·0	48·5	3·5	0·3	0·4	24	26 : — : —	9·8	Id.; id.
22	698	51·4	47·4	4·0	0·9	0·6	25	— : 22 : —	7·0	Large cirro-cumuli, lying NE. to SW; cirro-strati. ⊖
23	729	50·7	47·6	3·1	1·3	1·0	25	26 : 24 : —	6·5	Scud; cirro-cumuli; cirro-strati; cirri. ⊙
20 0	755	51·0	49·2	1·8	1·4	1·0	20	26 : — : —	1·2	Id.; cumuli to N.; cirro-strati to E. ⊙
1	776	51·0	47·0	4·0	1·4	1·1	23	25 : — : —	4·5	Id.; cumuli to S. ⊖
2	793	49·7	44·7	5·0	2·0	0·6	22	24 : — : —	2·5	Cirro-stratous scud; cirri; cirro-strati; cumuli to S. ⊖
3	828	48·9	43·8	5·1	0·8	0·7	22		1·0	Cirro-strati; cirri to S.; scud to N. ⊖
4	856	45·2	42·2	3·0	0·6	0·3	20		1·0	Id.; id.; haze on E. horizon.
5	868	43·3	41·8	1·5	0·3	0·2	19		0·3	Cirro-strati.
6	878	41·8	39·5	2·3	0·5	0·2	20		0·1	Patches of cirro-strati on horizon. ☽
7	903	41·8	39·6	2·2	0·4	0·2	19		0·0	Clear. ☽
8	918	42·2	40·0	2·2	0·4	0·1	20		0·2	Cirro-strati to SE. ☽
9	941	42·0	40·1	1·9	0·4	0·0	22		0·0	Clear. ☽
10	941	43·3	41·0	2·3	0·7	0·5	21		0·2	Thin cirri and haze; lunar corona. ☽
11	959	43·4	41·0	2·4	0·6	0·5	26		0·2	Id.; id. ☽
12	993	42·9	41·0	1·9	0·4	0·5	22		0·2	Id.; id. ☽
13	30·000	42·9	40·9	2·0	0·5	0·5	26		0·2	Thin cirri and haze; lunar corona. ☽
14	009	42·2	40·3	1·9	0·4	0·3	24		0·2	Id.; cir.-str. to W.; lunar corona. ☽
15	024	39·5	38·2	1·3	0·4	0·1	18		0·2	Band of cirro-strati to W.; id. ☽
16	019	39·4	38·3	1·1	0·3	0·1	17		0·2	Cirro-strati; haze on horizon. ☽
17	052	36·0	35·4	0·6	0·2	0·1	26		0·2	Id.; id.
18	062	34·4	34·0	0·4	0·1	0·1	20		0·2	Id.; id.
19	063	36·8	35·9	0·9	0·2	0·1	20		0·2	Cirro-strati on horizon.
20	068	36·7	36·0	0·7	0·2	0·1	16	— : 28 : —	3·0	Cirro-cumuli; cirri; cirro-strati.
21	102	35·4	34·8	0·6	0·2	0·1	20	— : 27 : —	6·0	Id.; cirro-cumulo-strati; cir.-str.; cirri. ⦶
22	109	39·7	38·5	1·2	0·1	0·0	12	28 : 28 : —	7·0	Scud to W.; cirro-cumuli; cirri. ⊙
23	110	40·9	39·9	1·0	0·0	0·0	18	— : 28 : —	6·5	Cirro-cumuli; cirro-strati; cirri; scud on Cheviot.
21 0	112	43·0	41·9	1·1	0·0	0·0	14		4·0	Cirri; cirro-strati. ⊙
1	110	46·6	44·7	1·9	0·2	0·1	18	24 : 28 : —	7·0	Loose scud; cirro-cumuli; cirri.
2	106	48·3	45·6	2·7	0·2	0·0	27	24 : 27 : —	7·5	Scud; cirro-cumuli.
3	096	48·4	45·3	3·1	0·1	0·0	22	23 : 26 : —	5·5	Id.; id. ⊙
4	090	43·9	42·8	1·1	0·1	0·0	16	22 : — : —	1·0	Id.; cirro-strati; cirri. ⊙
5	090	41·1	40·5	0·6	0·0	0·0	20	24 : — : —	4·0	Id.; cirro-cumulous scud.
6	098	37·7	36·2	1·5	0·1	0·1	16		1·0	Id.; id. ☽
7	094	35·6	35·1	0·5	0·1	0·0	16		0·3	Cirro-cumuli to W. ☽
8	089	37·4	37·1	0·3	0·4	0·2	20	22 : — : —	3·5	Loose misty scud to S., moving quickly. ☽
9	095	35·0	34·6	0·4	0·2	0·0			0·4	Cirro-strati to SW.; mist on the ground. ☽
10	096	32·9	32·6	0·3	0·0	0·0	28		1·0	Cirro-strati; strati; lunar corona caused by the mist. ☽
11	107	31·5	31·3	0·2	0·0	0·0	20		1·5	Stratus; cirri; patches of nebulous cirri. ☽

Nov. 20d 3h. Cirro-cumulous scud in very small patches at considerable distances from each other moving from W., covering a considerable extent of sky: cirri in feathers, and cirro-strati with mottled edges.
Nov. 21d 8h. Mist flying very low and quickly, producing a coloured lunar corona.
Nov. 21d 11h. Nebulous patches of cirri, very stationary.

Gött. Mean Time.	Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
21 12	30·104	30·6	30·3	0·3	0·0	0·0	20		1·5	As before; strati around; lunar corona. ☽
13	30·102	30·4	...	...	0·0	0·0	20		1·5	As before; density of fog variable; lunar corona. ☽
14	092	28·3	...	...	0·0	0·0	20		4·5	Stratus; barred cirri; bluish lunar corona. ⊁
15	083	29·3	29·2	0·1	0·1	0·0	18		4·0	As before. ☽
16	073	29·2	...	...	0·1	0·1	19		3·5	Stratus gone; cirri as before. ⊁
17	067	27·6	...	...	0·0	0·0	23		2·0	Cirri; cirrous haze; irregular lunar corona. ⊁
18	067	28·3	...	...	0·0	0·1	18		1·5	Cirro-strati; cirri.
19	063	27·0	...	...	0·0	0·0			3·0	Cirro-cumulo-strati; much hoar-frost.
20	065	28·6	...	...	0·0	0·0	20	— : 16 : —	6·0	Id., scarcely moving.
21	066	29·0	...	...	0·1	0·1	21	— : 16 : —	8·0	Id., radiating from SSW. and NNE. ⊙
22	057	30·9	30·7	0·2	0·1	0·0	19	— : 18 : —	8·0	Id., id.
23	052	32·0	31·7	0·3	0·1	0·0	22		9·0	Id. ⊙
22 0	034	34·2	33·3	0·9	0·1	0·0	23	— : 16 : —	9·0	Id.; scud; cirro-strati.
1	024	35·4	34·0	1·4	0·2	0·1	25	— : 16 : —	9·5	Id.; id.; id.; haze.
2	30·004	38·2	37·2	1·0	0·1	0·0	22	— : 16 : —	9·0	Id.; id.; cirri; cirro-strati; haze.
3	29·988	36·9	36·0	0·9	0·1	0·0	21	— : 16 : —	8·0	Id.; id.
4	978	38·0	37·0	1·0	0·1	0·1	18	— : 16 : 20	6·0	Id.; woolly cirri; cirro-strati; scud.
5	970	36·7	35·7	1·0	0·2	0·0	18		3·0	Cirro-cumuli; cirro-cumulo-strati.
6	969	34·4	33·7	0·7	0·1	0·1	16		3·5	Id.; id.; cirro-strati. ☽
7	962	35·0	34·1	0·9	0·3	0·0	10		2·5	Cirro-cumuli; cirri. ☽
8	961	34·0	33·2	0·8	0·3	0·3	16		5·5	Thin cirri; watery cirri; cirro-cumuli. ☽
9	952	35·0	34·0	1·0	1·0	0·0	16	— : — : 16	6·5	Woolly cirri. ☽
10	950	33·2	32·6	0·6	0·2	0·0	17		3·8	Id.; cirro-cumuli. ☽
11	934	34·7	33·6	1·1	0·2	0·0	22	17 : — : —	7·3	Patches of scud; woolly, linear, and watery cirri. ☽
12	929	36·5	35·0	1·5	0·2	0·3	17		9·9	Scud; cirro-strati.
13	29·912	38·6	36·6	2·0	0·3	0·1	16		10·0	Scud; cirro-strati.
14	907	39·6	37·2	2·4	0·5	0·2	16		10·0	Id.; id.
15	894	39·6	37·1	2·5	0·3	0·0			9·8	Id.; cirro-cumuli; cirro-strati.
16	864	38·5	36·2	2·3	0·5	0·2	20		9·8	The same.
17	856	40·1	37·0	3·1	0·3	0·0	12		9·7	Cirro-strati; cirro-cumuli.
18	854	38·5	36·4	2·1	0·3	0·1	16	16 : — : —	9·0	Patches of scud; cirro-cumulo-strati. ☽
19	841	37·1	35·2	1·9	0·5	0·3	17		1·5	Scud, cirro-strati, cirri, on horizon.
20	841	38·0	35·9	2·1	1·4	0·4	18	— : 18 : —	4·0	Loose and wavy cirro-strati; woolly cirri; scud to E.
21	840	38·2	36·5	1·7	0·5	0·3	17	— : 20 : —	9·5	Cirro-stratous scud; cirro-strati; wavy cirro-strati.
22	841	40·4	38·1	2·3	0·5	0·5	17	— : 20 : —	10·0	Id.; id.; scud.
23	849	41·9	39·5	2·4	0·5	0·3	18	— : 18 : —	9·9	Id.; id.; cum. on ESE. hor.
23 0	841	43·0	40·8	2·2	0·3	0·2	18	— : 18 : —	10·0	Nearly as before; tendency to rain.
1	842	43·6	41·2	2·4	0·3	0·5	18		10·0	Id.
2	850	43·5	41·2	2·3	0·7	0·8	17		10·0	Id.
3	861	42·5	40·7	1·8	0·9	0·1	18		10·0	Nearly homogeneous; Scotch mist.
4	866	42·5	41·0	1·5	0·3	0·2	18		10·0	Homogeneous; cirro-strati, coloured; misty.
5	886	42·3	41·0	1·3	0·3	0·1	18		10·0	Id.; id.
6	891	42·3	41·0	1·3	0·2	0·0			10·0	Scud; cirro-strati.
7	905	42·4	41·1	1·3	0·1	0·0	18		9·9	Id.; id.
8	904	41·2	40·2	1·0	0·0	0·0		— : 20 : —	9·7	Cirro-cumulo-strati.* ☽
9	909	38·0	37·7	0·3	0·1	0·1	22		9·0	Id.
10	912	38·7	38·2	0·5	0·0	0·0	20		9·0	Cirro-stratous scud; cirro-cumulo-strati. ⊁
11	916	37·8	37·2	0·6	0·2	0·0	20		4·0	Id. ☽
12	917	34·4	34·2	0·2	0·0	0·0	20	— : 20 : —	3·0	Id.; cirro-cumulo-strati. ☽
23	29·850	38·2	38·0	0·2	0·1	0·0		— : 18 : —	......	Sunday—Cloudy; A.M. Cirro-cumulo-strati; cirri; Evening clear; cirri.
24 13	29·780	26·0	26·7	...	0·3	0·0	18		1·0	Cirro-strati; cirri; Moon totally eclipsed. ☽
14	775	25·9	26·3	...	0·0	0·0	20	— : 29 : —	0·8	Cirro-cumulous scud; cirri; Moon partially eclipsed. ☽
15	774	25·1	25·7	...	0·0	0·0	18		1·5	Id.; id. ☽
16	778	27·2	27·5	...	0·0	0·0	18	— : 28 : —	9·2	Cirro-cumulo-strati. ⊁
17	786	29·7	29·5	0·2	0·0	0·0	20	— : 28 : —	9·9	Id., much denser.

Nov. 22d 11h. Increasing patches of scud; woolly, linear, and watery-looking cirri above; the watery-looking cirri appear to *move* but never to progress.

Nov. 22d 20h. Woolly cirri lying in bars from S. towards NNE.; piles of scud on Cheviot: the wind commenced to blow hard about 19h 37m.

* See additional meteorological notes after the *Hourly Meteorological Observations*.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.	
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From				
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.		
24	18	29·785	29·7	29·5	0·2	0·0	0·1	24	— : 28 : —	8·8	Cirro-cumulo-strati.	⊁
	19	797	30·4	30·2	0·2	0·1	0·1	18		9·8	Id.; cirro-strati.	
	20	807	30·2	30·0	0·2	0·1	0·0	24	— : 26 : —	6·0	Cirro-cumulous scud; dense cirro-strati to E.	☽
	21	818	29·1	28·9	0·2	0·1	0·0			1·0	Cirro-strati on horizon; patches of scud to SW.	⊙
	22	821	29·2	29·0	0·2	0·1	0·1	20		1·0	Cirri; haze on horizon.	⊙
	23	832	31·7	31·4	0·3	0·2	0·1	20	— : 26 : —	2·5	Cirro-cumuli; cirro-strati; haze.	⊙
25	0	831	32·7	32·3	0·4	0·1	0·1	18		2·5	Cirri; haze; patches of scud to N.	⊙
	1	830	36·0	35·0	1·0	0·1	0·0	20	— : — : 17	3·0	Id.; id.	⦶
	2	826	36·9	35·9	1·0	0·2	0·1			8·0	Woolly and linear cirri; cir.-str.; haze; solar halo.	⦶
	3	838	36·2	35·4	0·8	0·0	0·1	18		9·0	As before; solar halo.	⦶
	4	840	35·2	34·4	0·8	0·1	0·1	20	— : 29 : —	8·5	Cirro-cumuli; cirri; cirro-strati.	
	5	844	34·0	33·4	0·6	0·1	0·0	20		8·5	Id.; cirro-strati.	☽
	6	859	33·9	33·4	0·5	0·1	0·0	20		6·5	Id.; cirri.	☽
	7	868	31·9	32·5	...	0·0	0·0	22		6·0	Id.; milky band of cirri; lunar corona.	☽
	8	874	33·6	33·2	0·4	0·0	0·0	18		10·0	Cirro-cumulo-strati.	
	9	888	34·0	33·5	0·5	0·1	0·0	22		10·0	Id.	
	10	890	33·0	32·6	0·4	0·1	0·0	19		1·0	Id.; patches of auroral cirri.	☽
	11	896	30·6	...	...	0·0	0·0	17		1·5	Small cirro-cumuli; coloured lunar corona.	⊁
	12	899	31·4	...	...	0·0	0·0	20		4·0	Large fleecy cirro-cumuli; lunar corona.	⊁
	13	29·902	31·9	...	...	0·1	0·0	22		5·0	Cirro-cumulous scud.	⊁
	14	904	31·6	...	...	0·1	0·0	24		0·2	Patches of cirro-cumulous scud.	☽
	15	913	33·8	...	...	0·2	0·1	22		0·1	The same.	☽
	16	918	30·2	...	...	0·1	0·0	18		0·2	Cirro-strati to E.	☽
	17	921	29·3	...	...	0·0	0·0			0·3	Cirro-strati.	☽
	18	934	31·0	...	...	0·0	0·0	19	— : 22 : —	2·0	Cirro-cumulous scud to W.	⊁
	19	933	31·3	31·1	0·2	0·1	0·0	24	— : 22 : —	9·9	Id.	⊁
	20	928	30·8	30·9	...	0·0	0·1	19		1·8	Cirro-stratous scud; cirri; lunar corona.	⊁
	21	944	32·3	32·2	0·1	0·1	0·1	21	— : 21 : —	9·5	Id.; cirro-cumuli; cir.-str.; haze.	
	22	956	35·5	34·2	1·3	0·1	0·1	16	— : 21 : —	10·0	As before.	
	23	957	37·2	36·4	0·8	0·1	0·1	16		10·0	Misty scud; cirro-strati.	⊖
26	0	958	39·3	38·1	1·2	0·0	0·0	19		10·0	Id.	
	1	952	42·7	41·0	1·7	0·3	0·3	20	— : 20 : —	9·5	Cirro-cumuli; cirro-strati.	●
	2	948	42·2	40·5	1·7	0·3	0·1	21	— : 20 : —	9·5	Cirro-stratous scud; cirro-strati; cirri.	
	3	930	42·8	41·2	1·6	0·3	0·3	17	20 : — : —	9·0	Scud; cirro-strati; cirri; cumulo-strati.	●
	4	922	42·4	41·0	1·4	0·3	0·2	16	20 : — : —	8·5	Id.; id.; cumuli on S. horizon.	
	5	916	41·7	40·3	1·4	0·2	0·1	20		9·8	Id.; thin cirri.	
	6	906	41·1	40·0	1·1	0·2	0·1	17		4·0	Id.; thin cirri over the sky.	⊁
	7	910	40·0	39·4	0·6	0·1	0·1	16		8·5	Id.; cirri.	⊁
	8	907	42·6	41·6	1·0	0·2	0·2	17		9·9	Id.	
	9	910	45·3	43·2	2·1	0·9	0·7	17		10·0	Id.; cirro-strati.	
	10	916	46·0	43·8	2·2	1·3	0·7	19		10·0	Id.; id.; cirrous haze.	⊁
	11	907	45·8	43·6	2·2	1·0	0·9	20		9·8	Id.; id.; id.	
	12	904	46·8	44·1	2·7	1·5	1·0	20		10·0	Id.; id.; id.	
	13	899	47·4	44·5	2·9	1·8	1·4	18		10·0	Scud; cirro-strati; cirrous haze.	
	14	892	47·2	44·8	2·4	1·6	0·5	18		10·0	Id.; id.; rain$^{0·2}$	
	15	882	47·0	44·8	2·2	1·4	0·5	18		10·0	Id.; rain$^{0·2}$	
	16	894	47·8	45·2	2·6	1·3	1·0	20		10·0	Id.; shower^{1} since last hour.	
	17	874	48·0	45·2	2·8	2·2	1·3	20		10·0	Id.	
	18	861	48·0	45·4	2·6	1·8	0·7	18		10·0	Id.	
	19	857	48·3	45·6	2·7	1·0	1·0	19		10·0	Thick scud.	
	20	869	48·6	45·8	2·8	1·8	1·0	19	21 : — : —	10·0	Id.	
	21	860	48·6	45·8	2·8	1·5	1·1	20	20 : — : —	10·0	Id.	
	22	849	48·8	45·9	2·9	2·4	1·7	18	20 : — : —	10·0	Id.	
	23	845	49·1	46·3	2·8	3·0	1·7	18	20 : — : —	10·0	Scud; cirro-strati.	
27	0	847	49·2	46·5	2·7	2·9	1·1	20	20 : — : —	10·0	Id.; id.	
	1	831	49·4	46·7	2·7	1·9	1·5	18	20 : — : —	10·0	The same.	

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
27	2	29·821	49·2	46·6	2·6	2·1	0·9	19	20 : — : —	10·0	Scud ; cirro-strati.
	3	801	49·9	47·1	2·8	2·5	2·4	20	20 : — : —	10·0	The same.
	4	809	49·7	47·0	2·7	2·4	1·2	18	20 : — : —	10·0	Id.
	5	811	49·8	47·0	2·8	3·4	0·9	20	20 : — : —	10·0	Id.
	6	798	49·8	47·0	2·8	2·4	2·4	18		10·0	Id. ; dark.
	7	795	49·9	47·0	2·9	2·9	2·2	20		10·0	Id. ; id.
	8	805	49·5	46·9	2·6	1·7	1·5	18		10·0	Id. ; id.
	9	789	49·3	46·7	2·6	1·6	1·4	18		10·0	Id.
	10	774	48·7	46·0	2·7	2·8	2·0	18		10·0	Id.
	11	798	48·6	45·8	2·8	2·3	0·8	17		10·0	Id.
	12	783	48·0	45·5	2·5	1·0	0·8	18		10·0	Id.
	13	29·751	47·5	44·8	2·7	2·0	1·2	18		10·0	The same.
	14	734	47·4	44·8	2·6	1·2	0·7	18		10·0	Id.
	15	728	46·5	43·6	2·9	1·4	0·7	17		10·0	Id.
	16	719	46·0	43·6	2·4	1·8	1·4	17		10·0	Id.
	17	701	47·5	44·6	2·9	1·6	1·7	18		10·0	Id.
	18	681	46·5	43·3	3·2	1·8	2·0	21		10·0	Id. ; cirro-strati.
	19	684	45·2	42·5	2·7	1·6	1·4	18		9·9	Scud ; id.
	20	676	45·2	42·7	2·5	1·7	0·8	18	19 : — : —	9·9	Id. ; id.
	21	650	45·0	42·4	2·6	1·3	1·0	19	20 : — : —	9·5	Id. ; cirro-cumuli ; cirri ; cirro-strati. ⊖
	22	630	45·4	43·0	2·4	1·7	1·8	18	19 : 19 : —	10·0	As before.
	23	652	46·3	43·7	2·6	1·9	1·3	18	20 : 20 : —	9·9	Scud ; cirri ; cirro-strati ; haze.
28	0	647	47·3	44·3	3·0	2·0	1·0	21	21 : — : —	9·9	As before.
	1	653	47·7	44·7	3·0	1·1	0·7	19	20 : — : —	9·9	Scud.
	2	651	48·2	45·8	2·4	0·9	0·7	18	20 : — : —	10·0	Id.
	3	651	48·0	45·4	2·6	0·9	0·6	17	20 : — : —	10·0	Id. ; rain$^{0·2}$
	4	647	47·2	45·3	1·9	1·1	0·8	17	20 : — : —	10·0	Id.
	5	645	47·6	45·9	1·7	0·9	0·5	16		10·0	Dense homogeneous mass ; drops of rain.
	6	675	47·9	46·0	1·9	0·7	0·5	17		10·0	Id. ; id.
	7	688	47·5	46·0	1·5	1·0	0·6	16		10·0	Id. ; id.
	8	706	47·0	45·9	1·1	0·5	0·3	17		10·0	Clouds not so dense.
	9	711	46·6	45·5	1·1	0·5	0·0	24		10·0	Scud ; cirro-strati.
	10	714	46·0	45·0	1·0	0·0	0·0	22		10·0	Id. ; id.
	11	720	45·7	44·8	0·9	0·1	0·0	19		10·0	Id. ; id.
	12	728	45·4	44·8	0·6	0·1	0·0	17		10·0	
	13	29·740	45·0	44·7	0·3	0·0	0·0	8		10·0	Cirrous mass ; rain$^{0·2}$
	14	740	44·8	44·5	0·3	0·1	0·0	8		10·0	Scotch mist.
	15	745	44·8	44·6	0·2	0·1	0·0	8		10·0	Id.
	16	747	44·8	44·5	0·3	0·0	0·0			10·0	Id.
	17	755	44·8	44·5	0·3	0·0	0·0	11		10·0	Id.
	18	764	44·9	43·8	1·1	0·3	0·3	15		10·0	Scud ; mist clearing away.
	19	786	44·0	42·7	1·3	0·2	0·5	16		10·0	Scud and cirro-strati.
	20	799	43·3	41·9	1·4	0·7	0·4	14	14 : — : —	10·0	Scud ; cirro-strati and haze.
	21	827	42·7	41·4	1·3	0·6	0·5	14	14 : 20 : —	9·5	Loose scud ; cirro-cumuli ; woolly cirri.
	22	856	43·9	42·2	1·7	0·8	0·2	16	14 : — : —	9·9	Scud ; cirro-strati ; cirri.
	23	853	44·3	42·2	2·1	1·2	0·4	16		10·0	Id. ; id.
29	0	858	44·7	42·0	2·7	1·1	0·6	14	— ; 26 : —	9·7	Cirro-strati ; cirro-cumulo-strati. ⊖
	1	869	43·9	41·3	2·6	1·0	1·2	14	14 : 26 : —	9·0	Scud ; cirro-strati ; cirro-cumulo-strati.
	2	874	44·3	42·1	2·2	1·7	0·5	15	14 : 24 : 24	9·5	Id. ; id. ; cirri. ⊖
	3	893	44·9	42·1	2·8	0·6	0·4	16	14 : 24 : 24	9·0	Id. ; id. ; id. ⊙
	4	915	43·6	41·2	2·4	0·6	0·3	16	14 : — : —	9·7	Id. ; id. ; id.
	5	926	43·0	40·9	2·1	0·2	0·1	15		10·0	Scud.
	6	926	42·5	40·7	1·8	0·3	0·5	15		10·0	Id.
	7	943	42·0	40·4	1·6	0·3	0·2	14		10·0	Id. ; dark.
	8	964	40·6	38·9	1·7	0·4	0·3	12		8·5	Id.
	9	967	39·0	37·4	1·6	0·4	0·3	16		6·0	Id. ; cirro-strati.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29 10	29·971	36·9	35·7	1·2	0·2	0·0			3·0	Scud ; cirro-strati.
11	972	37·8	35·8	2·0	0·0	0·0			9·0	Cirro-cumulous scud.
12	982	34·9	33·6	1·3	0·0	0·0	15	— : 14 : —	3·0	Id.
13	29·984	33·6	32·4	1·2	0·0	0·0	14		7·0	Cirro-cumulous scud.
14	983	33·0	32·2	0·8	0·0	0·0			7·0	Id.
15	983	33·0	32·0	1·0	0·0	0·0			9·7	Id.
16	989	35·3	34·3	1·0	0·0	0·0			10·0	Id.
17	29·998	36·4	35·1	1·3	0·0	0·0			10·0	Id.
18	30·001	36·2	35·2	1·0	0·0	0·0			10·0	Id.
19	003	37·7	36·7	1·0	0·0	0·0			10·0	Id.
20	011	37·7	36·4	1·3	0·1	0·1	22		10·0	Id.
21	017	36·9	35·9	1·0	0·1	0·0	0		10·0	Id.
22	027	37·6	36·6	1·0	0·0	0·0	25	— : 14 : —	9·8	Id.
23	028	39·4	38·1	1·3	0·0	0·0			9·9	Id.
30 0	018	42·0	40·0	2·0	0·0	0·0	12	14 : — : —	10·0	Scud ; cirro-strati.
1	016	42·8	40·6	2·2	0·0	0·0	6	14 : — : —	9·7	Id. ; id.
2	015	42·6	40·3	2·3	0·1	0·1	16	14 : — : —	8·5	Id. ; id. ; cirri.
3	016	42·6	40·2	2·4	0·2	0·1	12	— : 14 : —	9·8	Cirro-cumulous scud ; cirro-strati.
4	018	41·6	39·3	2·3	0·1	0·0			9·9	Cirro-strati becoming dense scud.
5	032	40·4	38·9	1·5	0·0	0·0	4	12 : — : —	10·0	Dense scud ; drops of rain.
6	044	39·9	38·4	1·5	0·2	0·1	12		10·0	Scud.
7	049	39·9	38·3	1·6	0·1	0·0	12		10·0	Id.
8	054	39·8	38·4	1·4	0·1	0·0	12		9·9	Id.
9	052	39·0	38·0	1·0	0·1	0·0	16		10·0	Id.
10	050	38·9	37·7	1·2	0·0	0·0	14		10·0	Id.
11	055	38·6	37·8	0·8	0·0	0·0			8·0	Cirro-cumulous scud.
12	058	37·0	36·4	0·6	0·0	0·0	4		9·8	Id.
23	30·071	40·2	39·0	1·2	0·2	0·0			......	Sunday—Dense cirro-stratous scud.
1 13	29·983	38·2	37·3	0·9	0·2	0·1	4		10·0	Scud.
14	975	37·9	37·2	0·7	0·0	0·0	2		10·0	Id.
15	970	37·8	37·2	0·6	0·0	0·0	7		10·0	Id. ; rain$^{0·2}$
16	958	37·8	37·3	0·5	0·0	0·0	8		10·0	Id. ; rain$^{0·5}$
17	932	37·4	37·0	0·4	0·0	0·0	9		9·9	Cirro-cumulo-strati ; mist on the ground.
18	924	36·5	36·1	0·4	0·0	0·0	6		8·0	Id.
19	924	36·1	35·8	0·3	0·1	0·0	22		10·0	Thick scud.
20	908	36·9	36·4	0·5	0·0	0·0	0		10·0	Id.
21	907	37·5	37·0	0·5	0·0	0·0	4	12 : — : —	10·0	Id. ; rain$^{0·2}$
22	899	38·0	37·3	0·7	0·0	0·0	12	11 : — : —	10·0	Id. ; id.
23	896	38·0	37·6	0·4	0·0	0·0	14	11 : — : —	10·0	Id. ; id.
2 0	884	38·3	37·8	0·5	0·0	0·0	18		10·0	Id. ; id.
1	868	39·1	38·6	0·5	0·0	0·0	18		10·0	Scud ; cirro-stratous scud ; rain$^{0·2}$
2	854	39·4	38·6	0·8	0·1	0·0	14	— : 12 : —	9·9	Cirro-stratous scud.
3	834	39·1	38·4	0·7	0·0	0·0	8		9·8	Id.
4	838	38·8	37·7	1·1	0·0	0·0	12	— : 11 : —	10·0	Id.
5	825	37·8	36·7	1·1	0·0	0·1	12	— : 11 : —	9·0	Id.
6	826	37·0	36·2	0·8	0·0	0·0	15		10·0	Id.
7	834	37·2	36·2	1·0	0·1	0·1			10·0	Id. ; dark.
8	846	37·3	36·5	0·8	0·1	0·0			10·0	Id. ; id.
9	851	37·0	36·4	0·6	0·0	0·0			10·0	Id. ; id.
10	859	37·2	36·6	0·6	0·0	0·0			10·0	Id. ; id.
11	877	37·2	36·6	0·6	0·0	0·0	12		10·0	Scud ; dark.
12	890	37·1	36·5	0·6	0·0	0·0	4		10·0	Id. ; id.
13	29·905	37·9	37·0	0·9	0·0	0·0	0		10·0	Scud ; dark.
14	916	37·6	36·8	0·8	0·0	0·0	0		10·0	Id. ; id.
15	932	38·0	36·9	1·1	0·0	0·0	6		10·0	Id. ; id. ; rain$^{0·2}$

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
2 16	29·944	37·0	36·5	0·5	0·0	0·0	6		10·0	Scud; dark.
17	950	37·2	36·7	0·5	0·0	0·0	4		10·0	Id.
18	961	36·8	36·4	0·4	0·0	0·0	4		10·0	Id.; $rain^{0·2}$
19	29·970	36·8	36·4	0·4	0·0	0·0	6		10·0	Id.
20	30·001	36·8	36·3	0·5	0·1	0·0	1		10·0	Id.
21	025	36·6	36·0	0·6	0·0	0·0	0	— : 12 : —	10·0	Cirro-stratous scud; drops of rain.
22	045	36·7	36·3	0·4	0·2	0·0	2	— : 12 : —	10·0	Id.
23	055	37·7	37·1	0·6	0·0	0·0	4	— : 13 : —	10·0	Id.
3 0	057	38·3	37·6	0·7	0·0	0·0	6	— : 12 : —	10·0	Id.; drops of rain.
1	052	38·9	37·9	1·0	0·1	0·1	4	— : 12 : —	9·9	Id.; haze on horizon.
2	054	39·1	38·1	1·0	0·0	0·0	4	— : 12 : —	10·0	Id.; id.
3	062	39·0	38·2	0·8	0·0	0·0	1	— : 12 : —	9·9	Cirro-cumulous scud; cirro-strati.
4	092	38·7	38·0	0·7	0·1	0·0	20	— : 12 : —	10·0	Id.
5	113	38·5	37·7	0·8	0·0	0·0	24		10·0	Scud; cirro-strati.
6	104	38·2	37·1	1·1	0·2	0·0	15		9·5	Id.; id.; stars dim.
7	123	36·0	35·6	0·4	0·1	0·0	23		10·0	Id.; id.
8	139	34·7	34·3	0·4	0·0	0·0	22		9·8	Id.; id.; stars dim.
9	143	34·3	33·9	0·4	0·0	0·0	24		4·0	Thin clouds; id.
10	161	34·5	34·2	0·3	0·0	0·1	16		9·8	Scud and cirrous clouds?
11	159	33·6	33·1	0·5	0·0	0·0	26		3·0	Id.
12	167	33·7	33·3	0·4	0·0	0·0	18		9·9	Thin clouds.
13	30·164	32·2	31·9	0·3	0·0	0·0	30		7·0	Thin clouds.
14	170	33·2	33·0	0·2	0·0	0·0	18		2·5	Scud; cirro-strati. ☽
15	182	30·1	30·0	0·1	0·0	0·0	18		2·5	Id.; id.
16	177	29·2	29·0	0·2	0·0	0·0	6		0·5	Id.; id. ☽
17	175	29·3	29·5	...	0·0	0·0	14		8·0	Id.; id.
18	171	31·2	31·0	0·2	0·0	0·0	18		10·0	Id.; id.
19	187	31·9	31·9	0·0	0·0	0·0	16	14 : — : —	9·9	Id.; id.
20	184	31·9	31·7	0·2	0·0	0·1	30	14 : — : —	10·0	Id.; id.
21	184	32·7	32·0	0·7	0·0	0·0	10	14 : — : —	10·0	Id.; id.
22	184	34·0	32·4	1·6	0·0	0·0	14	— : 12 : —	9·9	Cirro-stratous scud; cirro-strati.
23	172	37·5	34·8	2·7	0·1	0·0	10	— : 12 : —	9·0	Id.
4 0	168	38·3	36·3	2·0	0·1	0·1	15	— : 12 : —	3·0	Id.; cirro-strati on horizon. ⊙
1	147	38·2	35·8	2·4	0·7	0·8	14	— : 14 : —	2·0	Id.; id. ⊖
2	137	38·2	35·6	2·6	0·6	0·6	14		0·8	Patches of scud; cirro-strati; cirrous haze. ⊙
3	132	37·2	34·7	2·5	0·6	0·4	14		0·2	Cirro-strati and haze on horizon. ⊙
4	122	35·0	33·2	1·8	0·3	0·4	14		0·2	Id.
5	112	33·5	32·0	1·5	0·5	0·3	15		0·2	Id.
6	100	33·9	32·1	1·8	0·4	0·3	15		0·2	Clouds near horizon.
7	107	32·5	31·0	1·5	0·4	0·0	20		0·2	Id.; stars dimmer.
8	103	31·1	30·0	1·1	0·0	0·0	24		0·3	Id.; faint aurora.
9	096	30·8	29·6	1·2	0·2	0·3	16		0·2	Id.
10	083	30·2	30·0	0·2	0·3	0·3	15		0·1	Id.
11	072	28·4	28·5	...	0·3	0·1			0·5	Id.; auroral light.
12	069	28·4	28·4	...	0·2	0·1	30		0·2	Id.
13	30·052	33·1	31·7	1·4	0·4	0·3	18		0·5	Clouds near horizon.
14	040	31·2	30·3	0·9	0·3	0·1	16		0·5	Id.
15	031	33·0	32·0	1·0	0·7	0·5	14		0·5	Id.
16	016	29·0	28·9	0·1	0·2	0·1	18		0·2	Id. ☽
17	008	29·0	28·6	0·4	0·2	0·1	16		0·0	☽
18	015	26·7	26·7	...	0·1	0·0			0·0	Clear.
19	013	35·3	25·0	0·3	0·0	0·0	22		0·1	Cirro-strati to SE.
20	009	24·1	24·1	...	0·2	0·0	25		0·3	Scud; loose cumuli to SE.; cirri to W.
21	018	24·9	25·3	...	0·2	0·2	18	20 : — : 28	5·0	Scud on SE. hor.; woolly cirri radiating from SSW.
22	025	24·4	24·1	0·3	0·1	0·0	20		7·0	As before. ⊙
23	024	26·7	26·1	0·6	0·0	0·0	16		5·0	Id. ⊙

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
5	0	30·024	28·2	27·6	0·6	0·1	0·0	26	—: 28 : 28	7·0	Cirri; cirro-strati; cirrous haze. ⊙
	1	017	30·3	29·4	0·9	0·2	0·0	22		8·0	Woolly cirri; id. ⊖
	2	015	31·1	30·0	1·1	0·0	0·0	22		6·0	Id.; id. ⊖
	3	001	29·7	29·0	0·7	0·0	0·0	21		8·0	The same; traces of a halo.
	4	30·010	28·6	28·0	0·6	0·0	0·0	24	—: —: 28	6·0	Id.; cirri scarcely moving.
	5	29·998	24·9	25·1	...	0·0	0·0	26		4·0	Id.
	6	29·997	24·9	24·9	...	0·0	0·0			4·0	Cirro-strati; cirrous haze.
	7	29·993	23·6	...	...	0·0	0·0	23		3·0	Cirri; id.
	8	30·006	24·2	24·0	0·2	0·0	0·0	24		3·0	Id.; id.; stars very dim.
	9	012	23·5	23·6	...	0·1	0·0	16		4·0	As before. ⊙
	10	017	23·5	23·5	...	0·0	0·0	22		4·0	Id.
	11	009	22·0	22·3	...	0·1	0·0	24		2·0	Id.; stars rather dim.
	12	011	22·4	22·2	0·2	0·2	0·1	20		1·0	Id.
	13	30·002	22·0	21·5	0·5	0·1	0·0	19		1·0	As before.
	14	29·999	19·6	19·8	...	0·1	0·0	17		1·0	Id.
	15	30·004	18·5	18·5	...	0·0	0·0	18		0·5	Cir. and cir. haze. on NW. hor. throughout the night.
	16	30·006	18·4	18·7	...	0·0	0·0	20		1·0	Id. id.
	17	29·998	20·2	19·9	0·3	0·0	0·0	22		2·5	Id. ☽
	18	29·996	20·9	20·6	0·3	0·1	0·1	21		1·5	Id.; lunar corona and halo. ☽
	19	29·994	20·6	20·5	0·1	0·1	0·0	17		4·0	Id.; id. ☽
	20	30·009	22·0	21·9	0·1	0·1	0·1	19		9·0	Cirro-strati; cirrous haze, tinged red.
	21	013	22·2	22·0	0·2	0·2	0·0	18		8·0	Woolly cirri, tinged yellow.
	22	024	22·4	22·2	0·2	0·0	0·0	18		6·0	Id.; cirro-strati; scud. ⊖
	23	031	23·5	23·2	0·3	0·0	0·0	21		7·0	Id.; id.
6	0	011	24·7	24·2	0·5	0·1	0·1	21	—: —: 24	3·5	Id.; id.; cirrous haze. ⊙
	1	005	26·8	26·0	0·8	0·1	0·1	20		2·0	Id.; id.; id. ⊙
	2	000	28·2	27·3	0·9	0·1	0·1	22		2·0	Id.; id.; id. ⊙
	3	009	30·2	28·8	1·4	0·1	0·1	20		1·0	Id.; id.; id. ⊙
	4	011	29·0	27·8	1·2	0·1	0·1	18		3·0	Id.; id.; id. ⊙
	5	019	26·8	26·0	0·8	...	0·0	20		0·1	Cirri; cirrous haze.
	6	026	26·2	25·3	0·9	...	0·0	22		0·0	Very clear.
	7	042	22·7	22·8	...	...	0·0	21		0·2	Hazy on N. horizon.
	8	052	23·2	22·9	0·3	...	0·0	21		0·0	
	9	050	19·8	20·1	...	...	0·0	18		0·0	
	10	044	22·3	21·7	0·6	...	0·0	20		0·0	
	11	048	22·3	22·0	0·3	...	0·0	22		0·0	Hazy on horizon.
	12	062	22·3	22·0	0·3	...	0·0	20		5·0	Cirri; cirrous haze.
	13	30·072	23·7	23·3	0·4	...	0·0	20		9·9	Cirrous clouds?
	14	069	22·7	22·6	0·1	...	0·0	28		2·0	Cirri and cirrous haze?
	15	083	22·3	22·0	0·3	...	0·0	24		1·5	Id.
	16	085	19·8	19·8	0·0	...	0·0	18		1·0	Id.
	17	091	18·7	18·8	...	...	0·0	26		0·0	Hazy.
	18	083	17·7	17·4	0·3	...	0·0	20		0·0	Haze on horizon.
	19	089	16·1	16·0	...	...	0·0	21		0·0	Id. ☽
	20	099	16·7	16·2	0·5	...	0·1	20		2·0	Cirri; hazy on horizon; red to SE. ☽
	21	111	15·3	15·4	...	...	...	18		4·0	Id.; id.; tinged red round horizon.
	22	117	17·9	17·2	0·7	...	...			5·0	Woolly cirri, radiating from NE by N. and SW by S. ⦶
	23	133	19·7	19·0	0·7	...	0·0			5·0	Id.; hazy on horizon. ⦶
7	0	120	22·7	21·8	0·9	...	0·0	25		3·0	Cirri; very hazy on horizon. ⦶
	1	114	25·0	24·3	0·7	...	0·1	4		6·5	Linear cirri; id. ⊙
	2	101	31·4	30·2	1·2	...	0·3	16	—: —: 31	7·0	Id.; id.; scud on Cheviot. ⦶
	3	120	30·8	29·8	1·0	...	0·2	16		7·0	Id.; id.; id. ⦶
	4	124	27·7	27·1	0·6	...	0·2	12		7·0	Id.; id.; id.
	5	133	28·0	26·9	1·1	...	0·1	12	8: —: 31	1·0	Patch of scud to S.; cirri; hazy on horizon.
	6	121	29·9	28·2	1·7	...	1·0	15		0·5	Patches of cir.-str. to S. and SW.; cir. haze on hor.
	7	125	30·8	29·0	1·8	...	0·8	14		0·0	Clear.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Dec. 5d 18h. Observation made at 18h 13m.

Dec. 5d 18h 55m. Kelso bells heard very distinctly.

Dec. 6d 5h—10d 2h. The force of the wind has been estimated during this time, the water in the cistern of the anemometer having been [frozen.

Gött. Mean Time.		Barometer at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
7	8	30·131	31·2	29·4	1·8	...	1·5	16		0·0	Clear.
	9	134	31·6	29·8	1·8	...	2·5	16		3·0	Scud.
	10	140	32·2	30·6	1·6	...	1·0	15		8·0	Thin scud.
	11	147	31·2	29·6	1·6	...	2·0	14		8·0	Scud; clouds broken.
	12	157	31·3	29·8	1·5	...	2·5	14		9·0	Id.; id.
	23	30·140	28·6	...	...	...	0·0	6	— : 11 : —	10·0	Sunday—Overcast; cir.-str. scud; flakes of snow, P.M.
8	13	30·021	33·0	32·2	0·8	...	0·1	7		10·0	Scud? snow$^{0·5}$ lately.
	14	016	33·4	32·7	0·7	0·7	0·1	4		9·9	Id.
	15	013	33·0	32·6	0·4	...	0·0	1		9·8	Cirro-stratous scud? flakes of snow occasionally.
	16	006	33·1	32·5	0·6	...	0·0	3		10·0	Id.; id.
	17	30·002	32·2	32·0	0·2	...	0·0	2		4·0	Id.; clouds round horizon.
	18	29·996	32·0	31·7	0·3	...	0·1	2		10·0	Id.; snow$^{0·5}$
	19	29·993	32·3	32·0	0·3	...	0·0	3		7·5	Id.; sky to S.
	20	30·010	31·8	31·5	0·3	...	0·0	6		9·8	Smoky scud; cirro-cumuli; cirro-strati.
	21	017	28·6	...	...	...	0·0	16	— : 8 : —	8·0	Cirro-cumulous scud; smoky fog to S.
	22	036	28·2	28·1	0·1	...	0·0	17	— : 8 : —	8·5	Id.; dense fog.
	23	050	29·6	29·4	0·2	...	0·1	18	— : 10 : —	9·9	Id.; cirro-strati.
9	0	059	30·9	30·7	0·2	...	0·1	21	— : 11 : —	10·0	Cirro-stratous scud.
	1	064	31·9	31·5	0·4	...	0·1	18	— : 10 : —	10·0	Scud; cirro-stratous scud.
	2	063	32·9	32·0	0·9	...	0·1	16	— : 10 : —	9·8	Cirro-cumulous scud.
	3	071	32·1	31·9	0·2	...	0·1	14	— : 10 : —	9·9	Id.
	4	082	32·0	31·9	0·1	...	0·1	22		10·0	Cirro-stratous scud.
	5	088	31·3	31·2	0·1	...	0·0	20		10·0	Id.
	6	103	30·9	30·9	0·0	...	0·0	10		10·0	Id.?
	7	108	30·7	30·6	0·1	...	0·0	6		10·0	Id.?
	8	117	30·4	30·3	0·1	...	0·0	16		10·0	Id.
	9	127	31·7	30·9	0·8	...	0·0	6		10·0	Id.?
	10	131	30·7	30·4	0·3	...	0·0	7		10·0	Id.?
	11	131	30·2	30·0	0·2	...	0·0	24		10·0	Id.?
	12	127	30·4	30·0	0·4	...	0·0			9·8	Id.?
	13	30·127	30·7	30·3	0·4	...	0·0	24		10·0	Cirro-stratous scud?
	14	125	31·4	31·2	0·2	...	0·0	2		10·0	Id.?
	15	128	32·1	31·9	0·2	...	0·0	2		10·0	Id.?
	16	124	32·5	32·1	0·4	...	0·0	3		10·0	Id.?
	17	116	32·9	32·4	0·5	...	0·0	3		10·0	Id.?
	18	116	32·8	32·5	0·3	...	0·0	16		10·0	Id.?
	19	114	32·6	32·5	0·1	...	0·0	10		10·0	Id.?
	20	116	32·9	32·5	0·4	...	0·1	18		10·0	Id.
	21	127	33·3	32·6	0·7	...	0·1	10		10·0	Id.
	22	139	33·9	33·0	0·9	...	0·1	14	— : 10 : —	10·0	Id.; cirro-strati; cirrous haze.
	23	133	33·6	33·0	0·6	...	0·1	16		10·0	Id.; cirrous mass.
10	0	107	34·8	33·7	1·1	...	0·1	4	— : 8 : —	10·0	Id.
	1	081	35·2	33·8	1·4	...	0·1	3		10·0	Id.; cirrous mass.
	2	070	35·1	33·8	1·3	0·1	0·0	6	— : 8 : —	10·0	Id.; id.;
	3	065	35·3	34·7	0·6	0·1	0·0	8	9 : — : —	10·0	Scud; cirro-stratous scud.
	4	053	34·9	33·8	1·1	0·1	0·0	2	9 : — : —	10·0	Id.; id.
	5	039	34·7	33·4	1·3	0·0	0·0	11		10·0	Id.; id.
	6	025	35·0	33·6	1·4	0·0	0·0	6		10·0	Id.; id.
	7	013	34·2	33·2	1·0	0·0	0·0	12		10·0	As before.
	8	009	34·0	33·0	1·0	0·0	0·0	8		10·0	Id.; some flakes of snow.
	9	30·001	33·9	32·9	1·0	0·0	0·0	10		10·0	Id.
	10	29·987	34·0	32·6	1·4	0·0	0·0	9		10·0	Id.
	11	979	33·7	32·2	1·5	0·0	0·0			10·0	Id.; some flakes of snow.
	12	971	33·2	32·2	1·0	0·1	0·0	2		10·0	Id.
	13	29·947	32·2	32·0	0·2	0·0	0·0	3		10·0	As before.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Dec. 7d 23h. Observation made at 23h 20m.

Gött. Mean Time.	BARO-METER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1^h.	10^m.	From	Clouds, Sc.:C.-s.:Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
10 14	29·929	32·2	31·8	0·4	0·0	0·0	3		10·0	As before.
15	907	32·0	31·6	0·4	0·0	0·0	6		10·0	Id.
16	894	32·8	31·4	1·4	0·0	0·0			10·0	Id.
17	874	32·6	31·4	1·2	0·0	0·0	2		10·0	Id.
18	849	31·8	31·1	0·7	0·0	0·0			10·0	Id.
19	831	32·1	31·4	0·7	0·0	0·0	10		10·0	Id.
20	820	31·8	31·0	0·8	0·0	0·0	10		10·0	Id.
21	816	31·7	30·9	0·8	0·0	0·0	20	10 : — : —	10·0	Thin scud; cirro-stratous scud.
22	810	31·1	30·4	0·7	0·0	0·0	18	12 : — : —	10·0	Thick scud; foggy to E.
23	803	31·8	31·4	0·4	0·0	0·0	18	— : 10 : —	10·0	Cirro-stratous scud.
11 0	787	32·0	31·7	0·3	0·0	0·0	20	— : 10 : —	10·0	Id.; a few fine particles of snow.
1	768	32·1	31·7	0·4	0·0	0·0	18		10·0	Id.; foggy to E. and N.
2	757	32·1	31·7	0·4	0·0	0·0	20	— : 12 : —	10·0	Id.; flakes of snow.
3	748	32·0	31·7	0·3	0·0	0·0	16		10·0	Id.; id.
4	753	32·3	31·7	0·6	0·0	0·0	12		10·0	Id.; id.
5	754	32·0	31·2	0·8	0·0	0·0	14	— : 12 : —	10·0	Id.; id.
6	762	31·5	30·7	0·8	0·1	0·0	13		10·0	Id.; id.
7	771	31·1	30·3	0·8	0·0	0·0	12		10·0	Id.
8	778	30·7	29·8	0·9	0·0	0·0	14		10·0	Id.
9	786	30·2	29·3	0·9	0·1	0·0	17		10·0	Id.
10	798	30·2	29·0	1·2	0·1	0·0	18		10·0	Id.
11	800	30·0	28·8	1·2	0·0	0·0	16		10·0	Id.
12	800	29·7	28·6	1·1	0·0	0·0	15		10·0	Id.
13	29·801	29·7	28·6	1·1	0·0	0·0	10		10·0	Cirro-stratous scud.
14	800	30·1	28·6	1·5	0·0	0·0	13		10·0	Id.
15	807	29·7	28·6	1·1	0·0	0·0	15		10·0	Id.
16	816	30·0	28·6	1·4	0·0	0·0	12		10·0	Id.
17	807	30·2	28·5	1·7	0·0	0·0	5		10·0	Id.
18	805	29·7	28·5	1·2	0·0	0·0	9		10·0	Id.
19	804	30·0	27·7	2·3	0·0	0·0	11		10·0	Id.
20	806	30·3	29·0	1·3	0·0	0·0	8		9·9	Id.; streak of sky to E.
21	808	30·1	28·9	1·2	0·0	0·0	12	— : 12 : —	10·0	Id.
22	811	30·6	29·4	1·2	0·0	0·0		12 : — : —	10·0	Scud; cirro-stratous scud.
23	807	31·0	29·7	1·3	0·1	0·0	1	12 : — : —	10·0	Id.
12 0	793	32·6	30·4	2·2	0·1	0·1	12	12 : — : —	10·0	Id.; cirro-stratous scud.
1	787	33·0	31·0	2·0	0·1	0·1	12	12 : — : —	10·0	Id.; cirrous mass.
2	779	33·0	32·0	1·0	0·1	0·1	12	12 : — : —	10·0	Id.; id.; haze.
3	763	32·7	31·7	1·0	0·2	0·1	12	12 : — : —	10·0	Id.; id.; id.
4	756	32·4	30·8	1·6	0·1	0·1	12		10·0	Id.; id.; id.
5	741	31·8	30·1	1·7	0·3	0·0	12		10·0	Scud; cirro-stratous scud.
6	723	31·4	29·6	1·8	0·4	0·1	14		9·8	Id.; id.; milky sky to SW.
7	703	30·7	29·3	1·4	0·1	0·0	9		10·0	Id.; id.?
8	697	31·4	30·3	1·1	0·1	0·1	10		10·0	Id.; flakes of snow.
9	688	30·4	29·8	0·6	0·1	0·0	10		10·0	Id.; very dark; flakes of snow.
10	675	33·9	31·3	2·6	0·8	0·6	12		10·0	Id.; showers of hail-snow since 9^h.
11	673	33·2	30·7	2·5	2·7	0·9	11		10·0	Id.; cirro-stratous scud.
12	656	33·0	30·6	2·4	1·0	0·4	9		10·0	The same.
13	29·637	33·3	30·5	2·8	1·1	0·4	8		10·0	The same.
14	610	33·1	30·3	2·8	1·1	0·5	9		10·0	Id.
15	583	31·9	29·4	2·5	0·7	0·1	8		2·5	Thin clouds.
16	564	31·0	30·0	1·0	0·5	0·2	6		2·5	Snow$^{0\cdot5}$; at 15^h 58^m sky clouded = 10·0, snow^{1}
17	531	30·7	29·7	1·0	0·7	0·1	7		10·0	Shower of snow^{1}
18	516	30·6	29·6	1·0	0·1	0·0	8		7·0	Thin clouds.
19	495	31·1	29·0	2·1	1·3	0·6	6		5·0	Cirro-stratous scud? thin clouds.
20	477	28·4	27·1	1·3	0·6	0·3	9		2·0	Id., with cirrous edges.
21	478	28·8	27·4	1·4	0·4	0·3	8		10·0	Id.; snow^{3}

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
12	22	29·465	26·9	26·5	0·4	0·3	0·2	2	— : 8 : —	5·0	Cirro-cumuli; loose cumuli; cumuli; haze.
	23	460	27·8	27·4	0·4	0·3	0·2	3		9·0	Id.; cumuli; snow[1]
13	0	447	28·0	27·7	0·3	0·4	0·0	10		9·8	Cir.-str. scud and cum. with cir. edges; flakes of snow.
	1	443	27·6	27·0	0·6	0·6	0·2	10	— : 11 : —	5·5	Id.
	2	435	28·2	26·8	1·4	0·2	0·1	10	— : 10 : —	7·0	Cirro-cumulous scud; cirro-strati; cumuli.
	3	428	27·2	26·3	0·9	0·0	0·0	7		10·0	Id.; snow$^{0·5}$
	4	428	26·2	25·8	0·4	0·1	0·0	7		10·0	Id.; snow$^{0·2}$
	5	428	26·5	26·0	0·5	0·0	0·0	6		10·0	Id.; homogeneous.
	6	412	30·6	29·2	1·4	0·4	1·0	9		10·0	Homogeneous.
	7	412	31·9	29·6	2·3	1·3	0·7	10		10·0	Id.
	8	411	32·7	30·4	2·3	0·6	0·6	10		10·0	Id.
	9	413	33·6	31·5	2·1	1·1	0·8	12		10·0	Id.
	10	415	34·2	31·7	2·5	0·8	0·4	8		10·0	Id.
	11	418	34·3	32·0	2·3	0·6	0·4	8		10·0	Id.
	12	428	34·5	32·0	2·5	0·5	1·0	8		10·0	Id.
	13	29·413	34·5	32·0	2·5	0·6	0·3	7		10·0	Homogeneous.
	14	413	34·7	32·6	2·1	0·4	0·4	8		10·0	Id.
	15	403	35·0	33·2	1·8	0·4	0·5	8		10·0	Id.
	16	408	35·0	33·5	1·5	0·5	0·5	6		10·0	Id.
	17	400	34·5	33·6	0·9	0·4	0·5	8		9·0	Scud; rain$^{0·2}$?
	18	400	34·1	33·4	0·7	1·0	1·0	7		7·0	Id.
	19	406	34·8	34·0	0·8	0·8	0·6	8		10·0	Rain$^{0·5}$
	20	407	35·6	34·4	1·2	0·8	0·7	8		10·0	Id.
	21	422	35·2	34·4	0·8	1·1	1·1	8	8 : — : —	10·0	Thin scud; cirrous clouds? rain$^{0·2}$
	22	430	35·7	34·6	1·1	0·9	0·4	8	8 : — : —	10·0	As before.
	23	440	35·2	34·4	0·8	0·5	0·4	8		10·0	Id.; sleet$^{0·5}$
14	0	439	35·9	34·7	1·2	0·6	0·5	8		10·0	Id.; id.
	1	439	36·0	34·7	1·3	0·9	0·5	10		10·0	Id.; id.
	2	435	36·2	34·9	1·3	1·0	0·3	8	8 : — : —	10·0	Scud; cirro-strati.
	3	442	35·9	34·3	1·6	0·7	0·6	8		10·0	The same; sleet$^{0·5}$
	4	444	35·0	34·0	1·0	1·5	0·8	4	8 : — : —	10·0	Id.; sleet$^{0·2}$
	5	447	35·4	34·0	1·4	1·3	0·6	6		10·0	Id.
	6	450	35·1	33·9	1·2	1·6	0·7	7		10·0	Id.
	7	452	35·0	34·1	0·9	1·6	0·9	7		10·0	Id.
	8	465	35·1	34·3	0·8	1·2	0·6	8		10·0	Id.; sleet$^{0·5}$
	9	469	35·4	34·3	1·1	1·2	1·2	8		10·0	Id.; sleet$^{0·2}$
	10	465	34·2	33·6	0·6	1·0	0·5	4		10·0	Id.
	11	466	34·8	34·1	0·7	0·3	0·8	7		9·5	Id.; rain$^{0·5}$
	12	464	34·8	34·1	0·7	0·7	0·3	4		9·5	Scud and thin clouds.
	23	29·447	34·7	34·1	0·6	0·4	0·0	4		......	Sunday—Cloudy; thick cir.-str. scud; loose scud below.
15	13	29·398	33·8	32·7	1·1	0·4	0·0	6		10·0	Dark.
	14	389	33·8	32·7	1·1	0·0	0·0	2		10·0	Id.
	15	381	33·7	32·7	1·0	0·0	0·0	4		10·0	Id.
	16	360	34·4	33·2	1·2	0·0	0·0			10·0	Id.; shower$^{0·5}$
	17	356	33·9	33·2	0·7	0·0	0·0	6		10·0	Id.
	18	352	35·6	35·0	0·6	0·0	0·0	6		10·0	Id.; passing showers$^{0·5}$
	19	346	36·7	35·8	0·9	0·1	0·1	5		9·9	Scud.
	20	335	36·2	35·5	0·7	0·1	0·1	8		10·0	Id.
	21	347	36·7	35·9	0·8	0·3	0·1	7	10 : — : —	10·0	Id.
	22	357	36·2	35·5	0·7	0·2	0·1	7	9 : — : —	9·9	Id.; cirro-strati.
	23	356	37·2	36·3	0·9	0·2	0·1	7	9 : — : —	9·9	Id.; id.; haze.
16	0	354	36·9	36·3	0·6	0·4	0·1	8	9 : — : —	9·9	Id.; id.; id.
	1	339	37·9	36·7	1·2	0·3	0·1	6	9 : — : —	10·0	Id.; id.; id.
	2	325	38·4	36·6	1·8	0·3	0·3	7	9 : — : —	9·9	Id.; showers around.
	3	321	37·3	36·2	1·1	0·4	0·1	6	8 : — : —	9·8	Id.; cirro-stratous scud; passing showers.
	4	322	36·7	36·0	0·7	0·4	0·3	6	9 : — : —	10·0	Id.; id.; id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time. d.	h.	Barometer at 32°. in.	Thermometers. Dry. °	Wet. °	Diff. °	Wind. Maximum force in 1h. lbs.	10m. lbs.	From pt.	Clouds, Sc.:C.-s.:Ci., moving from pt. pt. pt.	Sky clouded. 0—10.	Species of Clouds and Meteorological Remarks.
16	5	29·318	37·3	36·4	0·9	0·3	0·5	7		10·0	Scud; cirro-stratous scud; rain$^{0·5}$
	6	318	37·3	36·2	1·1	0·6	0·7	7		10·0	Loose scud; cirro-strati; id.
	7	315	37·4	36·4	1·0	0·7	0·3	6		10·0	As before; rain$^{0·2}$
	8	309	37·1	36·0	1·1	0·4	0·0	6		10·0	Id.; id.
	9	311	37·0	36·0	1·0	0·4	0·4	6		10·0	Id.; passing showers.
	10	304	37·2	36·3	0·9	0·4	0·1	5		10·0	Id.; id.
	11	300	37·6	36·3	1·3	0·6	0·2	4		10·0	Id.; rain$^{0·5}$; dark.
	12	298	37·4	36·7	0·7	0·8	0·7	6		10·0	Id.; id.; id.
	13	29·278	37·2	36·7	0·5	0·6	0·6	6		10·0	As before; rain$^{0·5}$; dark.
	14	272	37·5	37·0	0·5	0·4	0·1	4		10·0	Id.; id.; id.
	15	270	37·9	37·3	0·6	0·2	0·1	4		10·0	Id.; id.
	16	258	38·2	37·8	0·4	0·4	0·2	5		10·0	Id.; rain^{1}
	17	245	38·2	38·0	0·2	0·2	0·2	10		10·0	Id.; rain$^{0·2}$
	18	241	38·2	38·0	0·2	0·2	0·0	4		10·0	Id.; rain$^{0·5}$
	19	234	38·0	37·6	0·4	0·0	0·0	3		10·0	Id.
	20	236	37·7	37·4	0·3	0·0	0·0	3		10·0	Id.
	21	246	37·8	37·4	0·4	0·0	0·0	4		10·0	Misty, objects invisible 1 mile off.
	22	248	38·1	37·8	0·3	0·0	0·0	3		10·0	The same.
	23	260	38·5	38·2	0·3	0·0	0·0	3		10·0	Mist rather thicker.
17	0	256	38·4	38·2	0·2	0·0	0·0			10·0	Scotch mist, objects invisible at 400 yards.
	1	239	41·0	40·6	0·4	0·0	0·0			10·0	Fog clearing off rapidly. ●
	2	230	41·4	40·9	0·5	0·0	0·0	4	4 : — : —	9·9	Misty scud; cirro-cumuli; cirro-strati.
	3	237	40·4	40·0	0·4	0·0	0·0	6		10·0	Homogeneous; slight mist.
	4	246	39·3	39·0	0·3	0·0	0·0			10·0	Id.; fog increasing.
	5	244	37·9	37·7	0·2	0·0	0·0	20 v.		10·0	Fog, objects invisible at 200 yards.
	6	257	37·9	37·7	0·2	0·1	0·0	25		10·0	Id., id.
	7	265	37·2	37·0	0·2	0·0	0·0	23		10·0	Id., id.
	8	275	37·1	36·9	0·2	0·0	0·0	22		10·0	Id., objects invisible at 400 yards.
	9	286	37·6	37·4	0·2	0·1	0·0	23		10·0	Id.
	10	293	36·8	36·6	0·2	0·0	0·0	24		10·0	Scotch mist.
	11	319	36·7	36·4	0·3	0·0	0·0	2		10·0	Thick Scotch mist.
	12	330	37·0	36·7	0·3	0·0	0·0	2		10·0	Id.
	13	29·333	37·6	37·3	0·3	0·0	0·0			10·0	Thick Scotch mist.
	14	335	37·9	37·7	0·2	0·0	0·0			10·0	Id.
	15	348	38·8	38·4	0·4	0·0	0·0	4		10·0	Scotch mist, not so dense.
	16	362	38·4	38·0	0·4	0·0	0·0	4		10·0	Id., denser than last.
	17	374	39·0	38·7	0·3	0·1	0·1	4		10·0	Mist nearly away.
	18	396	39·3	39·0	0·3	0·1	0·0	4		10·0	Fog away ?
	19	428	38·9	38·7	0·2	0·0	0·0	4		10·0	Scud.
	20	451	39·0	38·8	0·2	0·1	0·1	5		10·0	Id.; drops of rain.
	21	472	38·7	38·1	0·6	0·1	0·0	4		10·0	Loose scud, cirro-strati, and cirrous clouds.
	22	498	38·0	37·3	0·7	0·0	0·0	4	12 : — : —	9·9	Scud; cirro-cumuli; cirro-strati.
	23	529	39·2	38·0	1·2	0·2	0·1	4		9·9	Id.; cirrous scud; id.
18	0	561	40·2	39·0	1·2	0·1	0·0	4	— : 10 : —	10·0	Cirro-stratous scud; id.; rain$^{0·2}$
	1	573	39·8	39·2	0·6	0·2	0·1	4	8 : — : —	10·0	Scud; cirro-strati; drops of rain.
	2	586	39·8	38·8	1·0	0·3	0·1	5	8 : — : —	10·0	Id.; id.
	3	616	39·7	39·0	0·7	0·2	0·1	4	6 : — : —	10·0	Id.; id.; wavy cirro-strati.
	4	642	39·3	38·3	1·0	0·1	0·0	3	6 : — : —	10·0	Id.; id.; id.
	5	664	38·7	37·6	1·1	0·2	0·1	2		10·0	Cirro-cumulous scud; cirro-strati.
	6	693	37·4	36·7	0·7	0·1	0·0	6		9·8	Scud; watery cirro-cumuli.
	7	723	36·7	36·2	0·5	0·0	0·0	5	6 : — : —	9·8	Id.; id.; shower lately.
	8	752	37·3	36·2	1·1	0·0	0·0	20	6 : — : —	9·9	Id.; id.; id.
	9	784	37·6	36·7	0·9	0·0	0·0	2		10·0	Id.; id.; id.
	10	801	36·7	36·1	0·6	0·1	0·0	7		9·8	Id.; id.; rain$^{0·5}$
	11	841	36·8	36·2	0·6	0·1	0·0	2		10·0	Id.
	12	858	36·6	36·1	0·5	0·1	0·1	2		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
18	13	29·870	36·0	35·4	0·6	0·1	0·0	2		10·0	Scud.
	14	882	36·2	35·6	0·6	0·1	0·0			10·0	Scud and cirro-strati.
	15	911	35·7	35·3	0·4	0·0	0·0			10·0	The same.
	16	932	34·6	34·3	0·3	0·0	0·0			6·0	Id.
	17	957	35·2	34·9	0·3	0·0	0·0			10·0	Id.
	18	29·972	36·1	35·6	0·5	0·0	0·0	12		10·0	Id.
	19	30·002	35·3	34·9	0·4	0·0	0·0	12		7·5	Id.
	20	027	35·7	34·8	0·9	0·0	0·0	4		9·5	Id.
	21	059	35·6	34·5	1·1	0·0	0·0	1	8 : — : —	9·9	Scud; cirro-stratous scud.
	22	077	35·2	34·3	0·9	0·1	0·0	2	8 : 24 : —	10·0	Loose scud on E. hor.; cir.-cum.-str.; rain to E.?
	23	101	35·0	34·3	0·7	0·0	0·0	31	8 : 24 : —	9·2	As before; stratus to E.
19	0	106	35·3	34·4	0·9	0·1	0·0	2	8 : 24 : —	4·0	Id.; id. ⊖
	1	100	35·7	34·8	0·9	0·1	0·1	1		0·5	Scud; cirro-cumulo-strati on horizon; stratus to E.? ⊙
	2	112	38·7	36·8	1·9	0·1	0·0	7		0·5	Id.; id. ⊙
	3	121	38·4	36·9	1·5	0·1	0·0	8		0·5	Cirro-strati and haze round horizon. ⊙
	4	132	36·1	35·0	1·1	0·1	0·0	20		0·5	Cirro-strati; stratus to E. ☽
	5	153	30·9	30·7	0·2	0·1	0·0	20		0·2	Id.; id. ☽
	6	161	28·6	28·3	...	0·0	0·0	19		0·5	Id.; id. ☽
	7	180	29·4	29·6	...	0·0	0·0			0·5	Id.; id. ☽
	8	200	27·6	...	...	0·0	0·0	18		0·5	Cirro-strati to NE. ☽
	9	209	26·5	...	...	0·0	0·0		— : — : 2	3·0	Woolly cirri; haze; lunar corona. ☽
	10	220	25·2	...	...	0·0	0·0			3·0	Cirro-strati; cirri. ☽
	11	229	25·5	26·0	...	0·0	0·0			1·5	Id.; id.; lunar halo. ☽
	12	236	26·7	27·0	...	0·0	0·0			1·5	Id.; id; id. ☽
	13	30·238	26·1	26·3	...	0·0	0·0			1·0	Cirro-strati; haze; lunar halo. ☽
	14	242	25·4	25·4	...	0·0	0·0	20		0·5	Haze; lunar halo. ☽
	15	250	25·2	25·3	...	0·0	0·0	19		1·0	Cirro-strati and haze on horizon. ☽
	16	252	24·6	24·7	...	0·0	0·0			1·0	Id. ☽
	17	252	25·2	25·2	...	0·0	0·0			1·0	Id.
	18	257	23·2	23·3	...	0·0	0·0	22		1·0	Id.
	19	267	21·5	...	...	0·0	0·0	20		0·1	Streak of cirro-strati to E.
	20	279	22·2	22·2	...	0·0	0·0	20		1·0	Cirri, cirro-strati, chiefly to E.
	21	293	21·7	22·0	...	0·0	0·0			5·0	Cirro-cumuli; cirro-strati; woolly and wavy cirri.
	22	303	22·7	22·7	...	0·0	0·0		— : 4 : —	6·0	As before. ⊖
	23	320	25·3	25·1	0·2	0·0	0·0	20		2·0	Id.
20	0	311	26·4	26·5	...	0·0	0·0	17		0·5	Cirro-strati and cirrous haze on horizon. ⊙
	1	303	28·4	28·0	0·4	0·0	0·0	20		0·4	Band of cirri to N.; cirrous haze on horizon. ⊙
	2	296	29·4	29·0	0·4	0·0	0·0	20		0·1	Haze on E. horizon. ⊙
	3	288	29·1	29·0	0·1	0·0	0·0	20		0·3	Cirro-strati and haze on horizon. ⊙
	4	292	25·8	26·0	...	0·0	0·0	20		1·0	Haze and cirro-strati on horizon.
	5	288	24·4	24·2	0·2	0·0	0·0	18	— : — : 8	0·8	Patches of cirri and cir.-str.; dense haze on hor. ☽
	6	295	21·9	22·2	...	0·1	0·0			0·5	Haze on horizon. ☽
	7	293	21·9	21·7	0·2	0·1	0·0	17		0·3	Patches of cirri; haze on horizon. ☽
	8	296	22·3	22·2	0·1	0·1	0·0			0·1	Streaks of cirri; haze; small lunar corona. ☽
	9	310	22·7	22·6	0·1	0·1	0·0	18		0·2	Cirri; cirrous haze. ☽
	10	311	23·9	23·7	0·2	0·1	0·0	22	— : 6 : —	8·0	Cirro-cumulous scud. ☽
	11	314	25·7	25·2	0·5	0·0	0·0	28	— : 5 : —	9·5	Cirro-stratous scud. ☽
	12	309	25·8	25·4	0·4	0·0	0·0	22	— : 5 : —	2·0	Cirro-cumulous scud. ☽
	13	30·305	23·8	23·7	0·1	0·0	0·0	20	— : 5 : —	6·0	Thin cirro-cumulous scud; fine lunar corona. ☽
	14	301	23·5	23·3	0·2	0·0	0·0	24		1·0	Id.; cirro-strati? on E. hor. ☽
	15	309	24·3	24·0	0·3	0·0	0·0	22	— : 6 : —	9·5	Thick cirro-cumulous scud.
	16	303	24·2	24·0	0·2	0·0	0·0	18	— : 6 : —	9·0	Id.
	17	298	23·7	23·8	...	0·0	0·0	20		8·0	Id. ☽
	18	293	25·3	25·0	0·3	0·0	0·0	21		9·9	Id.
	19	292	27·2	26·9	0·3	0·0	0·0	15		10·0	Id.
	20	292	27·9	27·5	0·4	0·0	0·0	2		9·9	Scud; streak of sky on S. horizon.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gött. Mean Time.		BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
20	21	30·302	27·9	27·6	0·3	0·0	0·0	20	8 : — : —	6·5	Scud.
	22	320	26·3	26·3	...	0·0	0·0	24	— : 10 : —	7·0	Cirro-cumulous scud; cirri; cirro-strati.
	23	325	29·2	28·7	0·5	0·0	0·1		— : 12 : —	9·9	Cirro-stratous scud; cumuli to NE.; slight mist.
21	0	317	31·4	31·0	0·4	0·0	0·0	17	— : 14 : —	9·0	Cirro-cumulous scud; cirro-strati; haze.
	1	314	31·9	31·4	0·5	0·0	0·1	20	— : 14 : —	9·5	Id.; id.; id.
	2	314	32·5	32·0	0·5	0·0	0·0	23	— : 14 : —	9·5	Large cirro-cumuli; id.; id. ⊖
	3	312	32·7	32·1	0·6	0·0	0·0	2	— : 14 : —	9·8	Cirro-stratous scud; id.; id.
	4	313	32·0	31·6	0·4	0·0	0·0	31	— : 12 : —	9·0	Id.; id.; bank of cir.-str. to W.
	5	325	31·6	31·1	0·5	0·0	0·0	0		10·0	Id.
	6	329	31·7	31·2	0·5	0·0	0·0	2		10·0	Id.; fine particles of snow.
	7	330	31·7	31·2	0·5	0·0	0·0	4		10·0	Id.
	8	333	32·0	31·6	0·4	0·0	0·0			10·0	Id.
	9	329	32·2	31·7	0·5	0·0	0·0	9	— : 9 : —	9·8	Id.
	10	328	34·6	32·6	2·0	0·0	0·0	4		8·8	Id.; lunar corona. ☽
	11	328	33·1	32·1	1·0	0·0	0·0	6	10 : — : —	4·0	Scud; cirro-cumulous scud. ☽
	12	326	33·1	31·1	2·0	0·0	0·0	8		4·0	The same; the scud causes a corona. ☽
22	0	30·287	35·7	33·7	2·0	0·0	0·0	12	— : 12 : —	......	Sunday—Cloudy; chiefly cirro-stratous scud.
	13	30·138	36·9	36·5	0·4	0·1	0·1	8		9·9	Cirro-stratous scud.
	14	128	35·9	34·2	1·7	0·1	0·1	8	— : 12 : —	9·9	Id.
	15	122	36·7	34·2	2·5	0·1	0·1	7		10·0	Id.
	16	116	37·2	34·2	3·0	0·1	0·1	10		10·0	Id.
	17	104	35·9	33·7	2·2	0·1	0·0	8		10·0	Id.
	18	104	35·8	33·4	2·4	0·1	0·0	7		10·0	Id.
	19	112	35·7	33·1	2·6	0·0	0·0	12		10·0	Id.
	20	102	35·6	32·9	2·7	0·0	0·0	10		10·0	Id.
	21	120	34·8	32·6	2·2	0·1	0·0	12	— : 10 : —	9·9	Id.
	22	124	34·7	32·4	2·3	0·0	0·0	6	— : 10 : —	9·5	Id. slight fog to E.
	23	128	35·0	32·9	2·1	0·0	0·0	4	— : 10 : —	9·6	Id.
23	0	127	36·0	33·2	2·8	0·0	0·0	8	— : 12 : —	9·9	Id.
	1	117	36·4	34·3	2·1	0·0	0·0	10		9·7	Id.
	2	115	36·6	34·1	2·5	0·0	0·0	7	— : 11 : —	9·8	Id.
	3	116	36·0	34·1	1·9	0·0	0·0	8		9·9	Id.
	4	110	35·7	33·2	2·5	0·0	0·0	9	— : 11 : —	10·0	Id.
	5	113	35·2	33·0	2·2	0·0	0·0	8		10·0	Id.
	6	114	34·9	32·7	2·2	0·0	0·0	12		10·0	Id.
	7	113	34·0	32·3	1·7	0·0	0·0	10		10·0	Id.
	8	118	34·7	32·6	2·1	0·0	0·0	2		10·0	Id.
	9	121	34·0	32·5	1·5	0·1	0·0	0		10·0	Id.
	10	125	33·9	32·4	1·5	0·0	0·0	2		10·0	Id.
	11	128	33·8	32·6	1·2	0·0	0·0	18		10·0	Id.
	12	126	33·9	32·7	1·2	0·0	0·0	2		10·0	Id.
	13	30·122	34·2	33·4	0·8	0·0	0·0	2		10·0	Cirro-stratous scud.
	14	122	34·9	34·2	0·7	0·0	0·0	1		10·0	Id.; fine particles of rain.
	15	127	34·8	34·0	0·8	0·0	0·0	6		10·0	Id.; id.
	16	120	34·5	33·9	0·6	0·0	0·0	8		10·0	Id.; id.
	17	115	34·8	33·9	0·9	0·0	0·0	7		10·0	Id.; id.
	18	111	34·7	33·9	0·8	0·0	0·0	6		10·0	Id.; id.
	19	116	34·5	33·8	0·7	0·0	0·0	8		10·0	Id.; id.
	20	124	34·2	33·4	0·8	0·0	0·0	8		10·0	Id.; id.
	21	128	34·4	33·3	1·1	0·0	0·0	8	— : 9 : —	10·0	Id.; id.; slight mist.
	22	134	33·7	33·2	0·5	0·0	0·0	6		10·0	Id.; id.; id.
	23	134	33·9	33·3	0·6	0·0	0·0	7		10·0	Id.; Scotch mist.
24	0	133	33·8	33·3	0·5	0·0	0·0	15	— : 10 : —	10·0	Id.; rain$^{0·1}$
	1	126	33·4	32·6	0·8	0·0	0·0	15	— : 12 : —	10·0	Id.; fine particles of snow.
	2	124	33·0	32·0	1·0	0·0	0·0	14	— : 12 : —	10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Dec. 22d 0h. Observation made at 23h 45m.

Gött. Mean Time.		BARO-METER at 32°.	THERMOMETERS.			WIND.			Clouds, Sc. : C.-s. : Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
			Dry.	Wet.	Diff.	Maximum force in 1h.	Maximum force in 10m.	From			
d.	h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
24	3	30·127	32·7	31·0	1·7	0·2	0·1	14	— : 12 : —	10·0	Cirro-stratous scud.
	4	126	31·8	29·8	2·0	0·2	0·1	14	— : 14 : —	10·0	Id.
	5	128	31·2	29·4	1·8	0·1	0·0	24 v.		10·0	Id.
	6	131	31·5	29·4	2·1	0·2	0·2	15		10·0	Id.
	7	137	31·3	29·3	2·0	0·1	0·0	15		10·0	Id.
	8	135	31·3	29·5	1·8	0·0	0·0	10		10·0	Id.
	9	140	31·4	29·8	1·6	0·0	0·0	10		10·0	Id.
	10	143	31·7	30·5	1·2	0·0	0·0	16		10·0	Id.; fine particles of rain.
	11	138	31·6	30·5	1·1	0·0	0·0	16		10·0	Id.; id.
	12	130	31·5	31·1	0·4	0·0	0·0			10·0	Id.; id.
	13	30·120	31·5	31·0	0·5	0·0	0·0	20		10·0	Cirro-stratous scud; fine particles of rain.
	14	117	31·5	30·9	0·6	0·0	0·0	8		10·0	Id.; id.
	15	108	31·3	31·0	0·3	0·0	0·0	6		10·0	Id.; id.
	16	092	31·6	31·3	0·3	0·0	0·0	4		10·0	Id.; id.
	17	082	31·9	31·6	0·3	0·0	0·0	6		10·0	Id.; id.
	18	077	31·9	31·6	0·3	0·0	0·0	6		10·0	Id.; id.
	19	078	32·0	31·7	0·3	0·0	0·0	6		10·0	Id.; id.
	20	080	32·0	31·8	0·2	0·0	0·0	6		10·0	Id.; id.
	21	086	32·6	32·0	0·6	0·0	0·1	16	— : 12 : —	10·0	Id.
	22	088	32·1	31·6	0·5	0·1	0·0	14	— : 12 : —	10·0	Id.
	23	088	32·1	31·4	0·7	0·0	0·0	14	— : 14 : —	10·0	Id.
25	0	081	32·3	31·5	0·8	0·1	0·0	10	— : 14 : —	10·0	Id.
	1	065	32·5	31·5	1·0	0·1	0·0	4	— : 16 : —	10·0	Id.
	2	055	32·8	31·6	1·2	0·0	0·0	15		10·0	Id.
	3	049	32·7	31·3	1·4	0·3	0·2	13		10·0	Id.
	4	045	32·3	31·2	1·1	0·4	0·2	14		10·0	Id.
	5	043	32·1	31·3	0·8	0·3	0·1	11		10·0	Id.
	6	040	32·0	31·0	1·0	0·1	0·0	14		10·0	Id.
	7	039	32·0	31·0	1·0	0·1	0·0	15		10·0	Id.
	8	049	32·0	31·0	1·0	0·0	0·0	14		10·0	Id.
	9	049	31·9	30·8	1·1	0·1	0·1	14		10·0	Id.
	10	042	31·9	30·7	1·2	0·1	0·1	14		10·0	Id.
	11	032	31·4	30·1	1·3	0·1	0·1	15		10·0	Id.
	12	023	31·2	30·0	1·2	0·1	0·1	15		10·0	Id.
	13	30·011	30·9	30·2	0·7	0·5	0·3	15		10·0	Cirro-stratous scud.
	14	29·987	30·9	30·5	0·4	0·4	0·2	15		10·0	Id.
	15	979	31·2	...	...	1·3	0·3	10		10·0	Id.
	16	972	31·4	30·0	1·4	0·9	0·4	16		10·0	Id.
	17	960	31·6	30·3	1·3	0·7	0·4	14		10·0	Id.
	18	938	31·7	30·4	1·3	0·7	0·4	15		10·0	Id.
	19	936	31·8	30·6	1·2	0·4	0·2	15		10·0	Id.
	20	929	32·1	31·0	1·1	0·3	0·4	15		10·0	Id.
	21	942	32·4	31·3	1·1	0·5	0·1	16	— : 16 : —	10·0	Id.
	22	935	32·5	31·2	1·3	0·2	0·2	14		10·0	Id.
	23	942	33·0	32·2	0·8	0·1	0·0	16	— : 16 : —	10·0	Id.
26	0	922	34·3	32·5	1·8	0·0	0·0	18	18 : — : —	9·8	Scud; cir.-str. scud; linear cirri; clouds breaking up.
	1	890	34·6	32·7	1·9	0·0	0·0	12	18 : — : —	10·0	Cirro-stratous scud.
	2	877	34·2	32·8	1·4	0·0	0·0	2		10·0	Id.
	3	873	33·6	32·6	1·0	0·0	0·0	4		10·0	Id.
	4	857	33·3	32·3	1·0	0·0	0·0	4		10·0	Id.
	5	851	33·4	32·7	0·7	0·0	0·0	4		10·0	Id.
	6	850	33·2	32·6	0·6	0·0	0·0			10·0	Id.; foggy.
	7	849	34·3	33·4	0·9	0·2	0·2	14		10·0	Id.; dark.
	8	845	34·0	33·3	0·7	0·3	0·1	14		10·0	Id.
	9	846	34·0	33·4	0·6	0·1	0·1	15		10·0	Id.
	10	858	34·3	33·6	0·7	0·1	0·0	18		10·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Dec. 24d 17h. The very fine rain which has been falling during the night freezes on reaching the ground, covering every thing with a coating of ice.

Gött. Mean Time.	Baro-meter at 32°.	Thermometers. Dry.	Wet.	Diff.	Wind. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.	
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.		
26 11	29·853	34·3	33·6	0·7	0·0	0·0	8		10·0	Cirro-stratous scud.	
12	848	33·4	32·9	0·5	0·1	0·0	3		10·0	Id. ; slight mist.	
13	29·853	33·4	32·9	0·5	0·0	0·0	0		10·0	Cirro-stratous scud ; slight mist.	
14	844	33·3	32·9	0·4	0·0	0·0	2		10·0	Misty scud ? id.	☽
15	842	33·3	32·8	0·5	0·0	0·0	2		10·0	Id. ; id.	
16	848	33·3	32·9	0·4	0·0	0·0	12		10·0	Id. ; id.	
17	834	33·3	32·9	0·4	0·0	0·0	4	18 : — : —	10·0	Id. ; id.	☽
18	827	33·2	32·9	0·3	0·0	0·0	6		10·0	Id. ; fog much denser.	
19	828	33·2	32·9	0·3	0·0	0·0	4		10·0	Id. ; dense fog.	
20	839	33·3	33·0	0·3	0·0	0·0	4		10·0	Id. ; id.	
21	824	33·3	33·1	0·2	0·0	0·0	8		10·0	Fog ; trees invisible at 150 yards distance.	
22	850	34·3	34·2	0·1	0·0	0·0	8		10·0	Id. ; id.	
23	850	34·0	33·8	0·2	0·0	0·0	16		10·0	Fog clearing away.	
27 0	835	33·4	33·0	0·4	0·0	0·0	20	24 : — : —	9·9	Misty scud ; cirro-cumuli ; cirro-strati.	
1	816	35·7	35·0	0·7	0·1	0·0	20	22 : — : —	9·9	Id. ; id.	
2	819	34·7	34·2	0·5	0·1	0·0	28		10·0	Nearly homogeneous ; fog getting denser.	●
3	815	34·2	33·7	0·5	0·0	0·0	16		10·0	Cirro-stratous scud ; cirrous haze ; very foggy.	
4	819	33·0	32·7	0·3	0·1	0·0	16		10·0	Fog, objects invisible at 200 yards.	
5	821	31·7	31·5	0·2	0·0	0·0	16		10·0	Id., id.	
6	825	31·2	30·9	0·3	0·0	0·0	17		10·0	Id., id. ?	
7	827	29·7	30·2	...	0·1	0·0	23		5·0 ?	Less fog ; stars dim.	
8	824	29·0	29·2	...	0·0	0·0	22		3·0 ?	Fog variable in density ; stars brighter.	
9	828	27·9	28·2	...	0·0	0·0	22		1·0 ?	Id. ; lunar corona.	
10	823	27·4	27·8	...	0·0	0·0	22		8·0 ?	Fog ; cirro-cumuli ; id.	
11	817	27·3	27·8	...	0·0	0·0	18		9·8	Id. ; cirro-strati.	
12	810	26·4	26·9	...	0·0	0·0			7·0 ?	Id. ; lunar corona.	
13	29·801	26·2	26·4	...	0·0	0·0	24		8·0 ?	The same ; fog rather denser.	
14	783	27·3	27·4	...	0·0	0·0	18		10·0 ?	Id. ; id.	
15	776	28·0	28·0	...	0·0	0·0	22		10·0	Id. ; id.	
16	755	27·7	27·8	...	0·0	0·0	20		10·0	Id. ; id.	
17	756	27·6	27·7	...	0·0	0·0	20		10·0	Id.	
18	736	27·7	27·6	...	0·0	0·0			10·0	Fog ; cirro-cumuli, or cirro-strati above.	
19	727	28·1	27·9	0·2	0·0	0·0	16		10·0	Id. ; id. ; much hoar-frost.	
20	730	27·8	27·8	...	0·0	0·0		— : 16 : —	6·0	Cirro-cumuli ; cirro-strati ; fog nearly away.	☽
21	730	26·6	26·4	0·2	0·0	0·0		— : 15 : —	8·0	Id. ; id.	
22	736	27·0	26·8	0·2	0·0	0·0			7·0	Id. ; id. ; cirri ; foggy.	
23	732	28·0	27·8	0·2	0·0	0·0	20	— : 23 : —	9·0	Cirro-cumulous scud ; cirro-strati ; cirri ; foggy.	
28 0	727	29·7	29·5	0·2	0·1	0·0	20	20 : 24 : —	10·0	Fog or stratus ; cirro-cumulo-strati ; cirrous haze.	●
1	716	31·0	30·8	0·2	0·0	0·0		8 : — : —	10·0	Id. ; id. ; cirrous mass.	
2	695	32·0	31·7	0·3	0·1	0·0	4		10·0	Dense fog, objects invisible at 150 yards.	
3	689	32·0	31·8	0·2	0·1	0·0	4		10·0	Id., id. id.	
4	677	32·3	32·0	0·3	0·0	0·0	2		10·0	Id., id. 100 yards.	
5	673	32·3	32·3	0·0	0·1	0·0	20		10·0	Id., id. id.	
6	670	32·1	31·9	0·2	0·0	0·0	22		10·0	Fog less dense.	
7	658	32·3	32·1	0·2	0·0	0·0	22		10·0	Dark.	
8	653	33·0	32·6	0·4	0·0	0·0	18		10·0	Rain$^{0·2}$	
9	644	34·1	33·7	0·4	0·0	0·0	4		10·0	Rain^{1}	
10	639	33·9	33·5	0·4	0·0	0·0	18		10·0	Id.	
11	627	34·0	33·7	0·3	0·0	0·0	18		10·0	Rain$^{0·2}$	
12	620	36·2	35·7	0·5	0·0	0·0	17		10·0	Cirro-stratous scud.	
23	29·668	39·6	39·2	0·4	0·3	0·1	22	22 : — : 26	3·0	Loose misty scud ; cirri.	
29 13	29·738	32·7	32·6	0·1	0·2	0·0	18		4·0	Cirro-strati ; cirrous haze.	☽
14	740	33·0	32·8	0·2	0·0	0·0	18		3·0	Id. ; id.	☽
15	763	31·6	31·4	0·2	0·0	0·0	17	— : 30 : —	5·5	Cirro-cumuli ; cirro-strati ; haze.	
16	762	34·4	33·9	0·5	0·0	0·0	18		9·0	Cirro-cumulous scud ; cirro-strati.	

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

Gott. Mean Time.	BAROMETER at 32°.	THERMOMETERS. Dry.	Wet.	Diff.	WIND. Maximum force in 1h.	10m.	From	Clouds, Sc.: C.-s.: Ci., moving from	Sky clouded.	Species of Clouds and Meteorological Remarks.
d. h.	in.	°	°	°	lbs.	lbs.	pt.	pt. pt. pt.	0—10.	
29 17	29·765	34·7	33·9	0·8	0·1	0·0	18		9·9	Cirro-cumulous scud; cirro-strati.
18	765	34·7	34·0	0·7	0·0	0·0	17		10·0	Id.
19	778	34·7	34·1	0·6	0·1	0·0	18		10·0	Scud and cirrous clouds?
20	792	34·8	34·2	0·6	0·0	0·0	18		10·0	Id.
21	807	35·3	34·7	0·6	0·0	0·0	18	—: 0:—	10·0	Thick cirro-cumulous scud.
22	820	34·8	34·3	0·5	0·0	0·0	18	—: 0:—	10·0	Id.
23	822	35·7	35·1	0·6	0·0	0·0	6	—: 2: 28	5·0	Cirro-cumulous scud; cirri. ⊙
30 0	823	37·4	36·7	0·7	0·0	0·0	24	—: 1:—	8·0	Id.; id.
1	822	38·7	37·7	1·0	0·0	0·0			9·5	Id.; id.
2	826	40·1	39·1	1·0	0·1	0·0	18		9·5	Cirro-stratous scud; cirro-cumulous scud.
3	835	39·4	38·6	0·8	0·0	0·0	17	—: 0:—	9·8	Id.; id.
4	837	39·4	38·5	0·9	0·0	0·0	17	—: 0:—	9·9	Id.
5	841	37·7	37·2	0·5	0·0	0·0	17	—: 1:—	10·0	Id.
6	853	36·7	36·2	0·5	0·1	0·0	17		8·0	Id.; stars dim; drops of rain.
7	863	36·7	36·2	0·5	0·1	0·0	17		5·0	Id.; id.;
8	869	36·5	36·1	0·4	0·0	0·0			10·0	Id.; dark.
9	881	36·2	35·8	0·4	0·1	0·0	15		9·0	Id.; id.; stars dim.
10	878	35·5	35·0	0·5	0·0	0·0	16		10·0	Id.
11	868	35·5	35·2	0·3	0·0	0·0	16		10·0	Id.
12	867	35·7	35·4	0·3	0·0	0·0	20		10·0	Id.
13	29·859	35·4	35·1	0·3	0·0	0·0	16		9·9	Cirro-stratous scud.
14	862	36·3	36·0	0·3	0·0	0·0	20		10·0	Id.
15	866	35·9	35·6	0·3	0·0	0·0	16		9·8	Id.
16	872	35·6	35·1	0·5	0·0	0·0	20		10·0	Cirro-cumulous scud.
17	873	35·1	34·8	0·3	0·0	0·0	4		10·0	Id.
18	871	35·6	35·2	0·4	0·0	0·0	20		10·0	Id.
19	875	35·7	35·1	0·6	0·0	0·0	19		10·0	Id.
20	885	35·4	35·0	0·4	0·0	0·0	19		10·0	Id.
21	895	35·5	35·0	0·5	0·1	0·0	21	—: 0:—	10·0	Id.; cirrous clouds above.
22	910	35·4	34·9	0·5	0·0	0·0	22	—: 0:—	9·9	Id.; cirro-strati.
23	916	36·8	36·2	0·6	0·1	0·0	18	—: 0:—	9·8	Id.; id.
31 0	913	37·9	37·2	0·7	0·0	0·0	21	—: 29:—	6·0	Cirro-cumulo-strati. ⊖
1	908	39·7	38·7	1·0	0·1	0·0	22		0·5	Id.; cirro-strati. ⊙
2	910	41·6	39·8	1·8	0·1	0·0	21		0·2	Id. ⊙
3	918	41·2	38·6	2·6	0·1	0·1	21		0·5	Cir.-str.; cirri on hor.; patch of scud on Cheviot. ⊙
4	933	37·8	37·0	0·8	0·1	0·1	20		0·5	Cirro-cumuli; cirro-strati; cirri. ⊖
5	934	35·2	34·6	0·6	0·1	0·1	18		0·2	Cirro-strati; cirri; haze on horizon.
6	945	32·4	32·2	0·2	0·1	0·0	20		0·1	Faint streaks of cirri to NE.
7	953	31·4	31·1	0·3	0·0	0·0	22		0·2	Thin cirri.
8	960	31·3	31·1	0·2	0·0	0·0	20		0·2	Id.
9	977	30·8	...	...	0·0	0·0	20		0·2	Cirro-strati on NE. horizon.
10	29·995	29·4	29·7	...	0·0	0·0	16		0·3?	Slight fog.
11	30·005	31·3	31·2	0·1	0·1	0·0	18		9·8	Cirro-cumulo-strati.
12	29·999	31·0	30·9	0·1	0·1	0·0	17		2·0	Id.
13	29·999	30·9	30·7	0·2	0·1	0·0	18		2·5	Cirro-cumulo-strati.
14	30·004	31·2	31·0	0·2	0·0	0·0	20		8·2	Id.
15	013	29·3	29·5	...	0·0	0·0	20		1·0	Id.; faint aurora to N.? ☽
16	013	28·2	28·4	...	0·0	0·0	20	20:—:—	1·0	Misty scud; cirro-cumulo-strati; aurora to N. ☽
17	010	29·4	29·2	0·2	0·0	0·0	17	—: 8:—	6·0	Cirro-cumulo-strati; fog just gone. ☽
18	009	28·8	28·8	...	0·0	0·0	20	—: 8:—	5·0	Id.; lunar corona. ☽
19	008	28·0	28·0	...	0·0	0·0	24		3·0	Id.; id. ☽
20	017	27·3	27·3	...	0·0	0·0	22		3·5	Cirro-cumulous scud. ☽
21	038	26·8	26·7	0·1	0·0	0·0	22	—: 4:—	6·0	Id. ☽
22	050	28·2	28·0	0·2	0·0	0·0	24	—: 7:—	7·0	Id.
23	052	29·2	28·7	0·5	0·0	0·0	22	—: 6:—	7·0	Id.

The direction of the wind is indicated by the number of the point of the compass, reckoning N. = 0, E. = 8, S. = 16, W. = 24. The motions of the three strata of clouds, Sc. (scud), C.-s. (cirro-stratus), and Cir. (cirrus), are indicated in a similar manner.

DAILY

AND

EXTRA METEOROLOGICAL OBSERVATIONS.

MAKERSTOUN OBSERVATORY,

1843 AND 1844.

Civil Day.	Thermometers. Min.	Thermometers. Max.	Rain in Gauge at Noon.	Thermometers. Min.	Thermometers. Max.	Rain in Gauge at Noon.	Thermometers. Min.	Thermometers. Max.	Rain in Gauge at Noon.	Thermometers. Min.	Thermometers. Max.	Rain in Gauge at Noon.
	°	°	in.	°	°	in.	°	°	in.	°	°	in.
	January.			March.			May.			July.		
1	26·6	33·8	0·238	34·5	42·6	0·013	32·6	70·5	0·000	40·9	61·8	0·000
2	24·2	31·8	·000	33·4	42·7	·143	37·2	69·3	·000	45·3	65·9	·015
3	13·2	40·3	·112	33·5	43·8	......	34·1	70·7	·000	45·7	62·6	·000
4	31·7	36·9	·351	31·3	37·4	·060	43·1	50·1	·010	42·0	58·5	·000
5	34·0	50·2	·365	24·4	38·6	·000	41·9	58·6	......	42·6	62·6	·000
6	39·9	46·8	·091	27·4	37·1	·000	44·3	70·7	·003	48·0	61·3	·012
7	35·5	44·3	·055	31·3	38·8	·000	43·4	65·2	·052	44·2	64·9	......
8	31·8	40·7	·030	25·6	36·9	·093	33·0	63·8	·000	39·6	69·4	·004
9	33·4	34·8	·002	39·0	48·7	·120	31·5	66·4	·000	45·6	61·9	·012
10	31·7	42·7	·535	34·9	45·2	......	40·6	51·4	·336	46·2	65·7	·045
11	37·1	45·0	·010	38·3	47·0	·037	45·6	54·0	·023	50·6	63·6	·027
12	35·7	45·7	·000	31·5	40·9	·070	44·4	65·7	......	49·0	62·9	·000
13	27·2	40·5	·000	26·5	40·9	·000	40·4	71·3	·000	42·6	60·3	·047
14	32·3	39·0	......	26·4	46·1	·000	46·4	58·3	·002	49·0	56·0	·517
15	20·3	36·9	·020	32·4	34·5	·340	42·6	57·3	·000	38·5	63·0	·086
16	27·4	35·7	·013	31·5	36·9	·420	33·6	61·3	·000	42·3	66·7	·144
17	27·2	43·9	·052	30·4	37·7	......	37·8	47·4	·002	38·3	65·3	·000
18	29·5	48·4	·002	18·2	45·6	·000	29·6	48·2	·010	48·0	65·4	·205
19	39·7	43·0	·000	32·4	47·7	·000	34·9	50·9	......	46·2	62·3	·064
20	30·5	39·5	·000	34·7	39·7	·047	36·9	51·9	·002	43·7	65·2	·000
21	33·5	47·4	......	24·4	45·0	·000	41·6	56·2	·094	44·1	62·1	......
22	29·3	46·1	·003	35·3	51·0	·000	35·8	56·4	·000	55·0	72·4	·300
23	34·6	43·2	·000	36·5	47·2	·087	31·1	55·3	·000	45·6	81·8	·000
24	26·2	42·9	·010	34·4	46·0	......	43·0	57·9	·000	56·7	69·4	·282
25	32·8	48·1	·000	34·6	47·1	·052	43·6	57·1	·002	54·2	74·4	·005
26	34·5	46·4	·045	35·5	55·9	·104	40·8	54·4	......	53·6	69·4	·188
27	39·2	50·1	·000	45·5	59·7	·047	35·7	52·8	·000	52·5	74·2	·005
28	43·0	44·8	......	30·5	53·4	·008	36·7	53·5	·000	54·9	73·2	......
29	32·7	51·7	·116	37·9	56·3	·000	42·6	53·2	·000	48·8	65·0	·075
30	35·2	42·7	·092	29·5	61·2	·000	42·1	55·2	·010	44·0	58·4	·020
31	29·7	35·1	·000	30·5	57·4	......	43·3	55·6	·000	50·5	62·2	·395
	February.			April.			June.			August.		
1	24·4	37·5	0·000	30·7	57·6	0·004	42·5	58·3	0·000	49·8	61·4	0·105
2	25·1	36·9	·230	30·4	54·7	......	44·8	54·2	......	49·7	66·4	·000
3	28·7	36·7	·060	41·7	52·0	·187	41·0	65·7	·000	38·4	62·2	·047
4	22·2	39·1	......	35·5	47·6	·070	38·9	67·4	·000	42·7	68·7	......
5	20·3	35·9	·198	33·6	52·1	·001	47·4	63·4	·120	46·1	71·2	·116
6	14·2	34·9	·000	26·4	50·0	·094	51·4	71·5	·012	51·9	68·9	·037
7	22·2	38·8	·030	38·3	59·8	......	52·8	67·8	·001	50·8	61·3	·245
8	26·4	38·4	·064	39·2	56·2	·002	53·8	67·6	·122	49·9	62·2	·015
9	32·5	38·8	·169	45·4	60·3	·000	44·6	67·6	......	50·4	62·5	·003
10	27·9	37·9	·085	40·3	58·1	·000	47·3	64·3	·017	40·3	64·3	·000
11	30·5	36·2	......	35·4	54·4	·000	40·7	68·2	·014	42·9	66·4	......
12	19·3	38·9	·105	37·1	51·0	·000	49·7	67·8	·042	50·9	63·8	·071
13	26·6	38·8	·012	40·9	57·0	·006	52·6	69·7	·087	46·7	67·0	·000
14	35·9	44·9	·015	39·3	59·1	......	50·2	61·4	·010	45·8	67·9	·292
15	42·4	48·2	·000	47·4	56·2	·055	47·4	60·2	·010	50·1	62·2	·293
16	33·8	45·0	·010	31·4	54·7	·000	42·9	65·5	......	47·5	69·0	·012
17	39·5	45·0	·000	41·0	57·2	·000	36·2	64·4	·002	48·9	59·0	·115
18	38·1	46·0	......	41·5	54·2	·000	47·1	57·7	·766	45·0	63·5	......
19	31·9	36·1	·525	43·5	60·4	·058	44·6	59·3	·448	43·8	61·7	·000
20	26·3	34·2	·018	48·9	62·3	·086	38·8	62·3	·166	53·6	62·6	·103
21	21·0	32·7	·034	42·2	56·3	·071	49·8	67·4	·460	46·9	62·2	·000
22	11·5	32·4	·018	41·6	55·3	·037	49·3	66·5	·006	48·9	56·7	·092
23	20·3	35·7	·000	38·6	55·2	·004	48·2	75·4	......	48·7	67·2	·039
24	30·0	35·5	·222	41·7	53·3	·002	51·8	71·8	·000	43·2	67·3	·031
25	26·6	36·4	......	38·3	60·4	·005	46·6	52·1	·714	39·6	62·8	......
26	22·4	34·3	·048	40·2	58·1	·000	43·5	54·3	·069	46·9	63·2	·000
27	12·5	38·9	·138	35·7	54·2	·000	45·5	59·3	·009	36·2	62·6	·000
28	30·6	42·7	·087	30·5	61·3	......	46·2	66·4	·008	40·0	68·9	·000
29	33·7	41·9	·000	31·5	66·9	·000	49·0	64·2	·000	38·3	72·9	·000
30				27·7	63·4	·000	38·8	67·0	......	40·0	75·5	·000
31										48·9	74·6	·000

Civil Day.	September. Thermometers. Min.	Thermometers. Max.	Rain in Gauge at Noon.	October. Thermometers. Min.	Thermometers. Max.	Rain in Gauge at Noon.	November. Thermometers. Min.	Thermometers. Max.	Rain in Gauge at Noon.	December. Thermometers. Min.	Thermometers. Max.	Rain in Gauge at Noon.
	°	°	in.	°	°	in.	°	°	in.	°	°	in.
1	45·2	73·5	......	50·7	56·4	0·040	45·0	47·2	0·000	35·4	41·9	......
2	43·6	76·3	0·000	47·9	59·4	·052	40·8	45·1	·010	33·9	38·8	0·088
3	43·1	67·5	·003	50·5	62·1	·002	43·1	45·6	......	35·2	38·9	·004
4	51·6	66·4	·000	46·0	56·2	·000	39·9	44·7	·070	26·9	38·7	·004
5	54·1	66·9	·000	42·5	52·5	·513	38·0	43·4	·420	21·6	30·5	·000
6	55·1	62·6	·015	34·9	54·3	·002	39·3	44·4	·549	17·9	28·0	·000
7	54·5	68·7	·024	35·7	50·1	·002	38·7	45·3	·696	15·7	31·8	·000
8	50·7	56·3	·576	28·7	53·1	·000	33·0	48·2	·038	21·8	32·9	......
9	49·9	60·2	·004	45·6	54·5	·000	43·1	49·7	·130	25·3	32·9	·020
10	44·0	60·9	·000	48·9	61·9	·019	39·9	46·5	......	29·1	35·0	·000
11	40·0	63·3	·000	42·7	57·8	·003	34·9	41·0	·000	30·2	31·8	·000
12	45·4	60·5	·009	37·0	58·3	·004	32·7	43·9	·025	28·8	32·8	·005
13	40·9	62·5	·000	52·3	61·1	......	36·0	43·3	·142	25·1	33·8	·028
14	48·1	55·0	·818	45·9	55·2	·050	37·2	45·3	·062	25·6	35·7	·008
15	57·9	62·3	·939	39·9	54·2	·310	33·9	53·3	·444	32·6	......	......
16	53·1	65·2	·092	44·0	55·8	·074	48·9	54·0	·005	31·9	37·6	·038
17	46·9	52·1	·044	45·0	51·8	·020	46·7	54·2	......	35·0	41·8	·088
18	39·2	53·3	·227	44·7	50·0	·005	43·7	51·3	·000	35·7	39·8	·004
19	45·1	56·4	·000	28·2	49·4	·014	49·3	53·2	·005	32·6	37·7	·000
20	43·3	55·2	·100	32·8	47·4	·173	45·8	51·2	·115	20·4	28·7	·000
21	32·8	55·6	·016	26·5	49·1	·098	33·8	48·7	·000	20·3	32·1	·000
22	29·7	54·1	......	32·2	48·7	·003	24·9	42·2	·000	30·1	36·8	......
23	32·2	51·3	·002	23·9	51·6	·002	32·5	43·3	·000	33·4	36·8	·000
24	46·9	58·7	·003	25·6	48·7	·000	29·4	41·0	......	33·0	33·2	·000
25	33·0	58·7	·000	34·0	49·9	·047	23·6	35·9	·009	30·4	32·0	·021
26	51·2	61·5	·002	43·2	50·4	·115	27·2	42·7	·006	29·8	34·4	·000
27	50·1	64·6	·000	42·0	47·9	......	37·4	49·2	·011	32·3	35·9	·000
28	54·5	59·3	·010	30·0	48·1	·002	43·3	47·6	·000	25·1	31·8	·000
29	35·4	55·6	·180	36·0	49·3	·018	40·9	44·6	·043	31·5	43·0	·055
30	33·3	56·6	·000	46·6	49·3	·004	32·8	42·6	·000	29·8	39·7	·000
31				45·9	50·1	·009				33·8	40·8	·000

TEMPERATURE OF WATER IN PUMP WELLS.

Göttingen Mean Time of Observations.	d.	h.	Temperature of Water. Pump Wells. Cottage.	Garden.	Göttingen Mean Time of Observations.	d.	h.	Temperature of Water. Pump Wells. Cottage.	Garden.	Göttingen Mean Time of Observations.	d.	h.	Temperature of Water. Pump Wells. Cottage.	Garden.
			°	°				°	°				°	°
Jan.	6	5	45·9	47·8	May	4	5	44·6	46·8	Sept.	2	5	50·2	49·8
	13	4	45·7	47·6		11	5	45·0	47·4		7	5	50·2	50·0
	20	5	44·9	47·3		18	5	45·6	47·6		14	5	50·4	50·0
	27	6	44·7	47·5		25	5	45·8	47·7		16	5	51·1	50·1
Feb.	3	5	44·4	...	June	1	5	46·3	47·9		21	5	50·7	50·2
	10	5	43·7	46·5		8	9	46·6	48·2		30	5	50·7	50·3
	17	6	43·6	46·2		15	5	47·4	48·3	Oct.	5	5	50·7	50·4
	26	5	43·1	...		22	5	47·5	48·6		12	5	50·5	50·5
March	2	5	42·6	44·8		29	6	47·8	48·7		19	6	50·3	...
	9	5	42·6	44·4	July	6	5	48·3	48·7		26	6	49·6	...
	16	5	42·6	43·7		13	5	48·4	48·7	Nov.	2	5	49·2	...
	23	5	42·6	43·7		20	5	48·7	48·8		9	5	48·7	...
April	2	5	42·7	44·3		27	5	49·1	49·1		23	5	48·1	49·8
	6	6	42·8	44·5	Aug.	3	5	49·5	49·3	Dec.	2	7	47·6	49·6
	13	5	43·4	45·3		10	5	49·7	49·4		14	5	45·9	48·4
	20	6	43·8	45·9		17	5	49·7	49·6		21	5	45·5	48·3
	27	5	44·2	46·5		24	5	50·1	49·7		28	5	44·8	48·0

	Maximum of Solar Radiation.									Minimum of Terrestrial Radiation.			
Civil. Day.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Sept.	Oct.	Nov.	Dec.
	°	°	°	°	°	°	°	°	°	°	°	°	°
1	92·1	106·7	102·5	97·0	...	103·7	71·9	49·5	43·3	...	45·5	43·4	30·4
2	77·2	101·6	69·3	95·2	...	117·4	74·1	46·0	40·0	...	45·0	38·9	29·8
3	69·0	108·7	109·8	101·4	...	103·0	79·3	47·2	41·0	...	43·4	40·4	33·6
4	55·3	56·3	103·0	90·0	...	96·5	72·0	47·5	45·4	...	40·5	37·0	23·3
5	59·9	94·2	73·2	80·5	...	102·9	61·5	44·2	42·9	...	42·1	...	10·7
6	79·9	102·9	...	88·5	...	70·0	70·0	44·0	43·5	...	28·9	36·6	11·2
7	91·0	106·9	80·0	110·5	...	96·2	79·6	50·0	43·3	...	30·5	34·9	7·9
8	81·5	108·0	104·5	103·5	...	...	61·0	49·1	32·5	49·8	24·2	30·0	11·8
9	88·0	110·0	107·0	74·5	...	89·2	52·0	56·0	34·5	47·0	44·2	40·9	20·5
10	92·2	54·6	105·6	97·0	...	91·0	73·0	50·4	34·8	35·9	45·0	36·2	26·8
11	83·0	63·0	124·0	91·8	...	90·1	78·5	43·2	31·8	33·4	36·9	...	28·3
12	71·0	99·0	113·0	93·3	...	...	63·0	48·7	33·4	40·2	34·3	28·7	26·4
13	86·4	107·3	103·3	67·8	...	85·0	77·3	...	39·8	35·4	48·2	34·2	18·7
14	88·5	86·9	97·3	82·0	...	56·0	62·5	53·7	35·0	47·2	40·1	33·3	24·0
15	74·7	102·7	86·3	88·2	...	65·3	67·4	54·4	38·8	52·9	36·2	29·9	31·2
16	84·5	113·7	118·7	105·0	...	92·0	73·0	57·1	38·5	49·3	39·5	44·7	30·3
17	86·4	86·3	95·8	94·5	...	54·4	55·5	57·8	45·7	42·5	39·0	42·9	33·7
18	85·9	80·5	68·0	107·5	...	71·1	65·9	52·5	40·1	36·7	...	38·4	34·5
19	91·4	79·2	95·0	100·0	...	79·1	...	68·5	49·2	42·0	23·5	45·6	27·5
20	92·0	96·0	106·6	109·9	...	77·6	...	69·0	50·5	37·7	29·2	37·7	15·2
21	...	71·0	96·1	64·1	83·2	79·2	59·4	75·7	38·2	29·5	23·4	26·3	14·3
22	82·2	96·0	108·5	105·3	...	89·0	59·8	43·5	37·0	26·0	30·2	22·2	24·4
23	77·7	94·5	120·5	115·5	...	57·5	58·1	43·5	38·2	28·7	21·1	...	28·9
24	83·5	102·0	97·9	79·0	110·4	94·3	58·1	43·7	33·2	44·0	22·0	25·2	30·4
25	88·5	100·2	61·7	92·0	107·0	80·4	55·7	60·7	32·0	29·2	29·8	18·7	28·2
26	88·4	90·0	76·7	96·8	106·4	78·3	53·4	57·6	35·7	47·2	40·1	24·0	28·1
27	73·0	91·5	89·5	112·1	98·6	91·0	53·2	49·5	40·8	45·0	36·6	32·9	30·4
28	100·6	73·0	98·8	98·1	110·0	63·8	53·4	...	33·8	50·1	27·5	41·7	20·3
29	107·0	78·0	98·2	98·1	116·6	85·0	51·0	48·8	55·5	32·0	31·8	39·2	30·6
30	101·0	74·0	106·2	62·2	109·5	77·5	49·7	43·3	50·3	29·7	43·5	24·3	27·0
31		78·5		81·3	107·0		51·7		60·4		43·5		32·5

ACTINOMETER.

Makerstoun Mean Time of First Reading. d.	h.	m.	s.	In Sun or Shade.	Observation. Begun. Sc. div.	Observation. Ended. Sc. div.	Change in 60s. Sc. div.	Effect of Sun. Sc. div.	Mean of Group. Sc. div.	Sun's Altitude. °
				AUGUST 18, 1843.						
18	22	25	0	Sun	23·5	31·0	+7·5			
		26	0	Shade	31·0	33·0	+2·0	5·7		
		27	0	Sun	33·0	41·0	+8·0	6·1		
		28	0	Shade	41·0	42·8	+1·8	6·1		
		29	0	Sun	42·8	50·6	+7·8	6·2	6·40	44·5
		30	0	Shade	50·6	52·0	+1·4	6·7		
		31	0	Sun	52·0	60·5	+8·5	7·2		
		32	0	Shade	60·5	61·8	+1·3	6·8		
		33	0	Sun	61·8	69·4	+7·6	6·2		
		34	0	Shade	69·4	70·9	+1·5	6·3		
		35	0	Sun	70·9	79·0	+8·1	6·8	6·70	45·0
		36	0	Shade	79·0	80·2	+1·2	6·8		
		37	0	Sun	80·2	88·2	+8·0	7·0		
		38	0	Shade	88·2	89·1	+0·9	7·0		
		39	0	Sun	89·1	97·0	+7·9			
18	23	0	0	Sun	7·0	13·4	+6·4			
		1	0	Shade	13·4	13·6	+0·2	6·1		
		2	0	Sun	13·6	19·8	+6·2	6·2		
		3	0	Shade	19·8	19·6	−0·2	6·5		
		4	0	Sun	19·6	26·0	+6·4	6·6	6·49	46·8
		5	0	Shade	26·0	25·8	−0·2	6·6		
		6	0	Sun	25·8	32·3	+6·5	6·6		
		7	0	Shade	32·3	32·2	−0·1	6·8		
		8	0	Sun	32·2	39·2	+7·0	7·1		
		9	0	Shade	39·2	39·1	−0·1	7·2		
		10	0	Sun	39·1	46·2	+7·1	7·3		
		11	0	Shade	46·2	45·9	−0·3	7·1	7·24	47·1
		12	0	Sun	45·9	52·4	+6·5	6·9		
		13	0	Shade	52·4	51·8	−0·6	7·4		
		14	0	Sun	51·8	58·8	+7·0	7·7		
		15	0	Shade	58·8	58·0	−0·8			
18	23	32	0	Sun	17·0	23·0	+6·0			
		33	0	Shade	23·0	21·9	−1·1	7·2		
		34	0	Sun	21·9	28·2	+6·3	7·3		
		35	0	Shade	28·2	27·2	−1·0	7·6		
		36	0	Sun	27·2	34·0	+6·8	7·9	7·56	48·0
		37	0	Shade	34·0	32·8	−1·2	7·9		
		38	0	Sun	32·8	39·4	+6·6	7·6		
		39	0	Shade	39·4	38·6	−0·8	7·4		
		40	0	Sun	38·6	45·2	+6·6	7·6		
		41	0	Shade	45·2	43·9	−1·3	7·7		
		42	0	Sun	43·9	50·1	+6·2	7·6		
		43	0	Shade	50·1	48·7	−1·4	7·7	7·86	48·2
		44	0	Sun	48·7	55·2	+6·5	7·9		
		45	0	Shade	55·2	53·8	−1·4	8·1		
		46	0	Sun	53·8	60·7	+6·9	8·4		
		47	0	Shade	60·7	59·1	−1·6			

Makerstoun Mean Time of First Reading. d.	h.	m.	s.	In Sun or Shade.	Observation. Begun. Sc. div.	Observation. Ended. Sc. div.	Change in 60s. Sc. div.	Effect of Sun. Sc. div.	Mean of Group. Sc. div.	Sun's Altitude. °
				AUGUST 19, 1843.						
19	0	3	0	Sun	23·5	29·0	+5·5			
		4	0	Shade	29·0	27·1	−1·9	7·6		
		5	0	Sun	27·1	33·0	+5·9	7·7		
		6	0	Shade	33·0	31·3	−1·7	7·9		
		7	0	Sun	31·3	37·8	+6·5	8·2	8·01	48·3
		8	0	Shade	37·8	36·1	−1·7	8·3		
		9	0	Sun	36·1	42·8	+6·7	8·3		
		10	0	Shade	42·8	41·4	−1·4	8·1		
		11	0	Sun	41·4	48·1	+6·7	8·0		
		12	0	Shade	48·1	46·9	−1·2	7·8		
		13	0	Sun	46·9	53·5	+6·6	8·0		
		14	0	Shade	53·5	52·0	−1·5	8·3	8·33	48·3
		15	0	Sun	52·0	59·0	+7·0	8·6		
		16	0	Shade	59·0	57·3	−1·7	8·8		
		17	0	Sun	57·3	64·5	+7·2	8·8		
		18	0	Shade	64·5	63·0	−1·5			
19	5	51	0	Sun	33·7	37·2	+3·5			
		52	0	Shade	37·2	36·5	−0·7	3·7		
		53	0	Sun	36·5	39·0	+2·5	2·8		
		54	0	Shade	39·0	39·0	0·0	2·4		
		55	0	Sun	39·0	41·3	+2·3	2·3	2·69	12·6
		56	0	Shade	41·3	41·4	+0·1	2·4		
		57	0	Sun	41·4	44·1	+2·7	2·7		
		58	0	Shade	44·1	43·9	−0·2	2·5		
		59	0	Sun	43·9	45·7	+1·8	2·0		
19	6	0	0	Shade	45·7	45·5	−0·2	2·0		
		1	0	Sun	45·5	47·4	+1·9	2·1		
		2	0	Shade	47·4	47·2	−0·2	2·1	2·07	11·5
		3	0	Sun	47·2	49·1	+1·9	2·1		
		4	0	Shade	49·1	48·9	−0·2	2·0		
		5	0	Sun	48·9	50·7	+1·8	2·2		
		6	0	Shade	50·7	50·2	−0·5	2·2		
		7	0	Sun	50·2	51·9	+1·7	2·3		
		8	0	Shade	51·9	51·2	−0·7	2·4	2·29	10·8
		9	0	Sun	51·2	52·9	+1·7	2·3		
		10	0	Shade	52·9	52·3	−0·6	2·3		
		11	0	Sun	52·3	54·0	+1·7	2·3		
		12	0	Shade	54·0	53·3	−0·7			
				SEPTEMBER 4, 1843.						
4	19	31	12	Sun	30·8	34·0	+3·2			
		32	12	Shade	34·0	34·9	+0·9	2·3		
		33	12	Sun	34·9	38·2	+3·3	2·5		
		34	12	Shade	38·2	39·0	+0·8	2·4	2·37	19·2
		35	12	Sun	39·0	42·1	+3·1	2·3		
		36	12	Shade	42·1	43·0	+0·9	2·3		
		37	12	Sun	43·0	46·3	+3·3	2·4		
		38	12	Shade	46·3	47·2	+0·9			

Aug. 18d 22h 40m. Barometer 29·686 in.; dry thermometer 71°·2; wet thermometer 66°·2; hazy on E. horizon; cumuli appearing on W., SSW., and N. horizon; strips of linear cirri about 20° altitude to S.; light wind from ENE.

Aug. 18d 23h 2m. Light breeze. 10m. Patches of cumuli approaching the Sun. 11m. Wind. 16m. Barometer 29·676 in.; dry thermometer 72°·6; wet thermometer 67°·4; in a few minutes cirri on the Sun, with loose patches of clouds nearly crossing it.

Aug. 18d 23h 34m. Light breeze from SSE. 41m. Calm. 42m. Cirri on the Sun; Sun clear at 43m. 23h 48m. Barometer 29·667 in.; dry thermometer 74°·4; wet thermometer 64°·7; wind blowing 0·2 lb. from SSE.; linear cirri to E., W., and S.; cumuli on horizon as before.

Aug. 19d 0h 8m. Barometer 29·658 in.; dry thermometer 75°·1; wet thermometer 65°·0; wind 0·2 lb. from SSE.; cumuli on horizon; mottled and radiated cirri. 0h 40m. The upper portion of a solar halo seen; cirri coming over the Sun.

Aug. 19d 5h 50m. Streaks of cirri and haze round horizon; none near the Sun. 6h 0m. Barometer 29·547 in.; dry thermometer 72°·4; wet thermometer 65°·3; wind 0·1 lb. from SSE. 6h 13m. Sun approaching the haze.

Sept. 4d 19h 35m. Barometer 30·200 in.; dry thermometer 47°·7; wet thermometer 46°·2; a few thin cirro-strati to NE.; a breath of wind occasionally; sky milky about the Sun, but no halo or clouds visible.

ACTINOMETER.

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation. Begun.	Observation. Ended.	Change in 60s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
d. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
SEPTEMBER 4, 1843.							
4 19 59 12	Sun	58·5	62·1	+3·6			
20 0 12	Shade	62·1	62·3	+0·2	3·5		
1 12	Sun	62·3	66·2	+3·9	3·7	3·80	22·9
2 12	Shade	66·2	66·5	+0·3	3·8		
3 12	Sun	66·5	70·9	+4·4	4·2		
4 12	Shade	70·9	71·1	+0·2			
4 20 47 12	Sun	62·8	67·0	+4·2			
48 12	Shade	67·0	67·3	+0·3	4·2		
49 12	Sun	67·3	72·1	+4·8	4·4		
50 12	Shade	72·1	72·7	+0·6	4·4	4·48	28·9
51 12	Sun	72·7	78·0	+5·3	4·7		
52 12	Shade	78·0	78·7	+0·7	4·5		
53 12	Sun	78·7	83·9	+5·2	4·7		
54 12	Shade	83·9	84·2	+0·3			
4 21 13 12	Shade	32·0	32·9	+0·9			
14 12	Sun	32·9	38·2	+5·3	4·5		
15 12	Shade	38·2	39·0	+0·8	4·4		
16 12	Sun	39·0	44·2	+5·2	4·5		
17 12	Shade	44·2	44·8	+0·6	4·6	4·65	32·0
18 12	Sun	44·8	50·0	+5·2	4·5		
19 12	Shade	50·0	50·8	+0·8	4·7		
20 12	Sun	50·8	56·7	+5·9	4·4		
21 12	Shade	56·7	57·0	+0·3	5·6		
22 12	Sun	57·0	63·0	+6·0			
4 21 40 12	Shade	62·4	62·0	−0·4			
41 12	Sun	62·0	67·2	+5·2	5·6		
42 12	Shade	67·2	66·8	−0·4	5·6		
43 12	Sun	66·8	72·1	+5·3	5·8	5·88	34·6
44 12	Shade	72·1	71·6	−0·5	6·0		
45 12	Sun	71·6	77·3	+5·7	6·1		
46 12	Shade	77·3	76·9	−0·4	6·2		
47 12	Sun	76·9	82·7	+5·8			
4 22 3 12	Shade	32·0	31·0	−1·0			
4 12	Sun	31·0	36·2	+5·2	6·1		
5 12	Shade	36·2	35·4	−0·8	6·1		
6 12	Sun	35·4	40·8	+5·4	6·4		
7 12	Shade	40·8	39·5	−1·3	6·8	6·43	36·6
8 12	Sun	39·5	45·0	+5·5	6·7		
9 12	Shade	45·0	43·9	−1·1	6·5		
10 12	Sun	43·9	49·2	+5·3			
SEPTEMBER 4, 5, 1843.							
4 22 30 12	Shade	20·6	19·9	−0·7			
31 12	Sun	19·9	25·3	+5·4	6·0		
32 12	Shade	25·3	24·7	−0·6	6·2		
33 12	Sun	24·7	30·4	+5·7	6·3		
34 12	Shade	30·4	29·8	−0·6	6·0	6·10	38·6
35 12	Sun	29·8	35·0	+5·2	6·0		
36 12	Shade	35·0	34·0	−1·0	6·1		
37 12	Sun	34·0	39·0	+5·0			
4 23 0 12	Shade	24·8	23·9	−0·9			
1 12	Sun	23·9	29·8	+5·9	6·7		
2 12	Shade	29·8	29·0	−0·8	6·8		
3 12	Sun	29·0	35·0	+6·0	6·8	6·70	40·2
4 12	Shade	35·0	34·2	−0·8	6·8		
5 12	Sun	34·2	40·2	+6·0	6·6		
6 12	Shade	40·2	39·8	−0·4	6·5		
7 12	Sun	39·8	46·0	+6·2			
4 23 34 12	Shade	24·3	23·9	−0·4			
35 12	Sun	23·9	29·4	+5·5	5·9		
36 12	Shade	29·4	29·0	−0·4	6·1		
37 12	Sun	29·0	34·9	+5·9	6·3	6·40	41·3
38 12	Shade	34·9	34·4	−0·5	6·6		
39 12	Sun	34·4	40·6	+6·2	6·7		
40 12	Shade	40·6	40·0	−0·6	6·8		
41 12	Sun	40·0	46·2	+6·2			
5 0 2 12	Shade	26·5	25·9	−0·6			
3 12	Sun	25·9	31·4	+5·5	6·0		
4 12	Shade	31·4	30·9	−0·5	6·3		
5 12	Sun	30·9	36·9	+6·0	6·7	6·57	41·4
6 12	Shade	36·9	36·0	−0·9	6·9		
7 12	Sun	36·0	42·0	+6·0	6·8		
8 12	Shade	42·0	41·2	−0·8	6·7		
9 12	Sun	41·2	47·0	+5·8			
5 0 31 12	Shade	27·9	27·2	−0·7			
32 12	Sun	27·2	33·2	+6·0	6·5		
33 12	Shade	33·2	32·9	−0·3	6·4		
34 12	Sun	32·9	39·2	+6·3	6·7	6·68	40·9
35 12	Shade	39·2	38·7	−0·5	6·7		
36 12	Sun	38·7	44·8	+6·1	6·8		
37 12	Shade	44·8	44·0	−0·8	7·0		
38 12	Sun	44·0	50·3	+6·3			

Sept. 4d 20h 1m. Dry thermometer 49°·5; wet thermometer 47°·7; slight breeze.
Sept. 4d 20h 50m. Dry thermometer 52°·7; wet thermometer 49°·4; still milky about the Sun; light breath of wind.
Sept. 4d 21h 20m. Dry thermometer 54°·4; wet thermometer 51°·0; observation at 17m 12s doubtful.
Sept. 4d 21h 44m. Dry thermometer 55°·2; wet thermometer 51°·2.
Sept. 4d 22h 7m. Dry thermometer 56°·5; wet thermometer 52°·4; light breeze.
Sept. 4d 22h 34m. Dry thermometer 57°·9; wet thermometer 53°·5.
Sept. 4d 23h 4m. Dry thermometer 59°·1; wet thermometer 54°·0.
Sept. 4d 23h 38m. Dry thermometer 61°·2; wet thermometer 55°·1.
Sept. 5d 0h 5m. Dry thermometer 62°·9; wet thermometer 55°·5.
Sept. 5d 0h 35m. Dry thermometer 64°·1; wet thermometer 57°·4.

ACTINOMETER.

Makerstoun Mean Time of First Reading. d.	h.	m.	s.	In Sun or Shade.	Observation. Begun.	Observation. Ended.	Change in 60s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
					Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
SEPTEMBER 5, 1843.										
5	1	2	12	Shade	33·5	33·0	−0·5			
		3	12	Sun	33·0	38·7	+5·7	5·7		
		4	12	Shade	38·7	39·2	+0·5	5·7		
		5	12	Sun	39·2	46·0	+6·8	6·7	6·40	39·6
		6	12	Shade	46·0	45·7	−0·3	6·8		
		7	12	Sun	45·7	52·0	+6·3	6·5		
		8	12	Shade	52·0	52·0	0·0	7·0		
		9	12	Sun	52·0	59·6	+7·6			
5	1	41	12	Shade	30·9	30·6	−0·3			
		42	12	Sun	30·6	37·2	+6·6	6·8		
		43	12	Shade	37·2	37·0	−0·2	7·0	7·05	37·1
		44	12	Sun	37·0	44·0	+7·0	7·1		
		45	12	Shade	44·0	44·0	0·0	7·3		
		46	12	Sun	44·0	51·5	+7·5			
SEPTEMBER 6, 7, 1843.										
6	23	31	20	Shade	30·9	32·9	+2·0			
		32	20	Sun	32·9	40·0	+7·1	5·2		
		33	20	Shade	40·0	41·9	+1·9	5·2		
		34	20	Sun	41·9	49·1	+7·2	5·6	5·65	40·5
		35	20	Shade	49·1	50·4	+1·3	6·0		
		36	20	Sun	50·4	57·8	+7·4	6·1		
		37	20	Shade	57 8	59·2	+1·4	5·8		
		38	20	Sun	59·2	66·3	+7·1			
7	0	20	20	Sun	26·7	33·5	+6·8			
		21	50	Shade	34·9	34·0	−0·9	7·6		
		22	50	Sun	34·0	40·7	+6·7	7·5		
		24	50	Shade	44·7	44·1	−0·6	7·1	7·22	40·4
		26	20	Sun	44·0	50·3	+6·3	6·9		
		27	50	Shade	50·7	50·0	−0·7	7·0		
		29	20	Sun	49·9	56·1	+6·2			
SEPTEMBER 7, 1843.										
7	22	58	22	Sun	26·3	35·2	+8·9			
		59	52	Shade	37·0	40·0	+3·0	5·4		
	23	1	22	Sun	41·0	49·0	+8·0	5·6	5·60	39·0
		3	22	Shade	51·9	53·8	+1·9	5·8		
		4	22	Sun	53·8	61·2	+7·4			
7	23	8	22	Sun	24·9	33·0	+8·1			
		9	52	Shade	34·1	35·6	+1·5	6·3		
		11	22	Sun	36·1	43·6	+7·5	6·3	6·30	39·4
		12	52	Shade	44·2	45·1	+0·9	6·3		
		14	22	Sun	45·3	52·2	+6·9			

Makerstoun Mean Time of First Reading. d.	h.	m.	s.	In Sun or Shade.	Observation. Begun.	Observation. Ended.	Change in 60s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
					Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
SEPTEMBER 7, 8, 1843.										
7	23	39	22	Sun	26·7	33·0	+6·3			
		41	22	Shade	33·2	32·9	−0·3	6·4		
		42	22	Sun	32·9	38·9	+6·0	6·3		
		43	52	Shade	39·0	38·8	−0·2	6·3		
		45	22	Sun	38·5	44·7	+6·2	6·6	6·51	40·2
		47	12	Shade	44·7	44·0	−0·7	6·8		
		48	22	Sun	44·0	49·9	+5·9	6·6		
		49	52	Shade	50·0	49·3	−0·7	6·6		
		51	22	Sun	49·1	55·0	+5·9			
8	0	0	22	Sun	27·8	33·3	+5·5			
		1	52	Shade	33·0	31·8	−1·2	6·5		
		3	22	Sun	30·9	36·1	+5·2	6·7		
		4	52	Shade	35·7	33·9	−1·8	6·8		
		6	22	Sun	32·9	37·7	+4·8	6·7	6·71	40·2
		7	52	Shade	37·0	35·1	−1·9	6·8		
		9	22	Sun	34·2	39·2	+5·0	6·7		
		10	52	Shade	38·9	37·3	−1·6	6·8		
		12	22	Sun	36·7	42·0	+5·3			
8	0	38	22	Sun	17·2	23·9	+6·7			
		39	52	Shade	23·9	23·8	−0·1	6·6		
		41	22	Sun	23·4	29·7	+6·3	6·7		
		42	52	Shade	29·8	29·1	−0·7	7·0		
		44	22	Sun	28·8	35·1	+6·3	6·8	6·71	39·4
		45	52	Shade	35·1	34·8	−0·3	6·6		
		47	22	Sun	34·4	40·8	+6·4	6·7		
		48	52	Shade	41·0	40·7	−0·3	6·6		
		50	22	Sun	40·2	46·4	+6·2			
8	1	5	22	Sun	39·8	45·3	+5·5			
		6	52	Shade	45·1	44·0	−1·1	6·8		
		8	22	Sun	43·2	49·0	+5·8	6·9		
		9	52	Shade	48·9	47·8	−1·1	6·9		
		11	22	Sun	47·2	53·0	+5·8	6·9	6·89	38·1
		12	52	Shade	52·9	51·9	−1·0	6·9		
		14	22	Sun	51·3	57·3	+6·0	6·9		
		15	52	Shade	57·2	56·3	−0·9	6·9		
		17	22	Sun	55·9	62·0	+6·1			
8	1	35	22	Sun	50·2	56·5	+6·3			
		36	52	Shade	56·3	55·3	−1·0	7·0		
		38	22	Sun	54·8	60·6	+5·8	6·9		
		40	7	Shade	60·2	59·0	−1·2	7·1		
		41	22	Sun	58·8	64·8	+6·0	7·2	7·01	36·1
		42	52	Shade	64·3	63·1	−1·2	7·0		
		44	22	Sun	62·3	68·0	+5·7	7·0		
		45	52	Shade	67·1	65·7	−1·4	6·9		
		47	22	Sun	64·9	70·1	+5·2			

Sept. 5d 1h 6m. Dry thermometer 65°·4; wet thermometer 58°·9; cirro-strati gathering to NW.

Sept. 5d 1h 40m. Dry thermometer 66°·2; wet thermometer 57°·2; cirro-cumuli in strata covering the sky, and near the Sun. 48m. Cirro-cumuli on the Sun, and in zenith. In all the shade observations the screen was placed near the instrument, but changed every observation.

Sept. 6d 23h 30m. Sky clear near the Sun; a few mottled cirri near the Sun; wind blowing 0·3 lb. from SW. In the shade observations the screen was placed at a distance of 18 inches from the instrument. 23h 35m. Dry thermometer 66°·8; wet thermometer 57°·6.

Sept. 7d 0h 20m. Dry thermometer 67°·7; wet thermometer 58°·0. 0h 22m 50s. At this Sun observation the instrument was exposed 90s instead of 60s; the reading at 23m 50s has been obtained by taking ⅔ of the rise in 90s.

Sept. 7d 23h 2m. Dry thermometer 71°·1; wet thermometer 62°·8; a few patches of mottled cirri and cirro-strati, but not near the Sun; [light breeze.

Sept. 7d 23h 12m. Sky as before; brownish haze on horizon; breeze; dry thermometer 72°·5; wet thermometer 63°·5.

Sept. 8d 0h 6m. Dry thermometer 73°·0; wet thermometer 64°·3. Breeze at 0h 2m; calm at 10m.

Sept. 8d 0h 45m. Dry thermometer 73°·8; wet thermometer 65°·1; curled cirri coming up from NW.

Sept. 8d 1h 12m. Dry thermometer 75°·3; wet thermometer 65°·5.

Sept. 8d 1h 35m. Strips of cirri approaching the Sun. 41m. Dry thermometer 76°·0; wet thermometer 66°·1. 48m. Reticulated cirri approaching the Sun very nearly; some of the finer filaments have perhaps already reached it.

ACTINOMETER.

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation. Begun.	Observation. Ended.	Change in 60s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
d. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
September 8, 1843.							
8 2 30 42	Sun	54·0	60·2	+6·2			
32 22	Shade	60·0	59·2	−0·8	6·9		
33 22	Sun	59·2	65·3	+6·1	7·1		
34 52	Shade	65·1	64·0	−1·1	7·0	6·98	31·2
35 52	Sun	64·0	69·8	+5·8	7·0		
37 22	Shade	69·2	67·9	−1·3	6·9		
38 22	Sun	67·9	73·3	+5·4			
8 2 46 22	Sun	68·0	72·3	+4·3			
47 57	Shade	71·0	68·2	−2·8	7·0		
48 57	Sun	68·2	72·3	+4·1	6·7	6·77	29·8
50 22	Shade	71·4	68·9	−2·5	6·6		
51 22	Sun	68·9	73·0	+4·1			
September 21, 1843.							
21 17 44 30	Sun	35·8	35·3	−0·5			
46 0	Shade	35·1	29·8	−5·3			
47 0	Sun	29·8	29·2	−0·6			
48 30	Shade	28·9	28·4	−0·5	0·0		
49 30	Sun	28·4	27·9	−0·5	0·1		
51 0	Shade	27·8	27·1	−0·7	0·3	0·26	0·7
52 0	Sun	27·1	26·9	−0·2	0·5		
53 30	Shade	26·6	26·0	−0·6	0·4		
54 30	Sun	26·0	25·8	−0·2			
56 0	Shade	25·7	30·0	+4·3			
57 0	Sun	30·0	29·8	−0·2			
58 35	Shade	29·5	29·0	−0·5	0·3		
59 35	Sun	29·0	28·8	−0·2	0·3		
21 18 1 0	Shade	28·7	28·1	−0·6	0·5		
2 0	Sun	28·1	28·0	−0·1	0·4		
3 30	Shade	28·0	27·6	−0·4	0·3	0·33	2·4
4 30	Sun	27·6	27·6	0·0	0·4		
6 0	Shade	27·3	27·0	−0·3	0·3		
7 0	Sun	27·0	27·0	0·0	0·2		
8 40	Shade	26·9	26·7	−0·2	0·3		
9 40	Sun	26·7	26·8	+0·1			
21 18 14 0	Sun	27·8	28·0	+0·2			
15 30	Shade	28·0	27·7	−0·3	0·5		
16 30	Sun	27·7	28·0	+0·3	0·6		
18 0	Shade	27·9	27·6	−0·3	0·7		
19 0	Sun	27·6	28·0	+0·4	0·6	0·54	4·4
20 30	Shade	27·8	27·7	−0·1	0·4		
21 30	Sun	27·7	28·0	+0·3	0·5		
23 0	Shade	28·0	27·8	−0·2	0·5		

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation. Begun.	Observation. Ended.	Change in 60s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
d. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
September 21, 1843.							
21 18 24 0	Sun	27·8	28·2	+0·4	0·6		
25 45	Shade	28·1	27·9	−0·2	0·8		
26 45	Sun	27·9	28·7	+0·8	1·1		
28 10	Shade	28·6	28·2	−0·4	1·2	0·92	5·5
29 10	Sun	28·2	28·9	+0·7	1·0		
30 30	Shade	28·9	28·7	−0·2	0·8		
31 30	Sun	28·7	29·2	+0·5	0·6		
33 0	Shade	29·0	28·9	−0·1	0·7		
34 0	Sun	28·9	29·6	+0·7	1·0	0·90	6·5
35 30	Shade	29·6	29·2	−0·4	1·1		
36 30	Sun	29·2	30·0	+0·8	1·1		
38 0	Shade	30·0	29·9	−0·1	0·9		
39 0	Sun	29·9	30·8	+0·9			
21 19 22 0	Sun	34·0	36·3	+2·3			
23 30	Shade	37·0	37·7	+0·7	1·5		
24 30	Sun	37·7	39·9	+2·2	1·6		
26 15	Shade	40·3	40·9	+0·6	1·7		
27 15	Sun	40·9	43·3	+2·4	2·0	2·09	13·7
28 40	Shade	43·9	44·1	+0·2	2·5		
29 40	Sun	44·1	47·1	+3·0	2·8		
31 20	Shade	47·7	47·9	+0·2	2·5		
32 20	Sun	47·9	50·4	+2·5			
21 20 6 0	Sun	55·9	59·4	+3·5			
7 30	Shade	60·0	60·2	+0·2	3·5		
8 30	Sun	60·2	64·1	+3·9	3·7		
10 0	Shade	64·7	65·0	+0·3	3·6		
11 0	Sun	65·0	68·9	+3·9	3·6	3·56	19·3
12 30	Shade	69·0	69·3	+0·3	3·5		
13 30	Sun	69·3	73·1	+3·8	3·6		
15 0	Shade	73·7	73·9	+0·2	3·4		
16 0	Sun	73·9	77·3	+3·4			
21 21 14 0	Sun	52·7	57·8	+5·1			
15 30	Shade	58·2	59·0	+0·8	4·3		
16 30	Sun	59·0	64·2	+5·2	4·7		
18 0	Shade	64·9	65·1	+0·2	5·0		
19 0	Sun	65·1	70·4	+5·3	5·1	4·83	26·8
20 30	Shade	70·9	71·2	+0·3	4·9		
21 30	Sun	71·2	76·3	+5·1	4·9		
23 0	Shade	76·8	76·9	+0·1	4·9		
24 0	Sun	76·9	81·8	+4·9			

Sept. 8^d 2^h 35^m. Dry thermometer 76°·2; wet thermometer 66°·0; Sun clear of cirri, although thin sheets are both above and below it.

Sept. 8^d 2^h 46^m. Cirri approaching the Sun; breeze. 49^m. Thin cirri occasionally on the Sun; dry thermometer 76°·2; wet thermometer 65°·4.

Sept. 21^d 17^h 45^m. Streak of cirro-stratus to NE.; sky reddish to E. 59^m. Streaks of cirro-strati near the Sun, but under it. 18^h 5^m. Cirro-strati almost touching the lower limb of the Sun; at 8^m the Sun quite clear of the cirro-strati. 18^h 10^m. Barometer 30·210 in.; dry thermometer 40°·8; wet thermometer 40°·7. 18^h 14^m. Misty cirro-strati from NE. to E. 18^h 17^m. Becoming hazy near the Sun, and little patches of hazy cirri pass above and below it; doubtless some of them pass over it, but they must be very small. 18^h 29^m. Hazy-looking near the Sun. 18^h 34^m. Scud moving from NE. across the zenith, and below the Sun. 18^h 39^m. Sky covered with thin scud, still the Sun remains pretty free from it. 18^h 40^m. Barometer 30·225 in.; dry thermometer 42°·6; wet thermometer 42°·0.

Sept. 21^d 19^h 21^m. Somewhat hazy-looking about the Sun, but no clouds; streaks of cirrus to E. at 31^m. 19^h 34^m. Barometer 30·237 in.; dry thermometer 47°·2; wet thermometer 46°·0.

Sept. 21^d 20^h 5^m. A strip of hazy cirro-stratus on E. horizon. 20^h 18^m. Barometer 30·248 in.; dry thermometer 49°·2; wet thermometer 48°·1.

Sept. 21^d 21^h 14^m. Rather hazy about the Sun.

ACTINOMETER.

SEPTEMBER 21, 22, 1843.

Makerstoun Mean Time of First Reading. d. h. m. s.	In Sun or Shade.	Observation. Begun. Sc. div.	Observation. Ended. Sc. div.	Change in 60s. Sc. div.	Effect of Sun. Sc. div.	Mean of Group. Sc. div.	Sun's Altitude. °
21 22 21 10	Sun	33·0	40·3	+7·3			
22 30	Shade	41·0	42·4	+1·4	5·7		
23 30	Sun	42·4	49·4	+7·0	5·6		
25 0	Shade	50·4	51·9	+1·5	5·5		
26 0	Sun	51·9	59·0	+7·1	5·9	5·93	32·2
27 30	Shade	59·9	60·9	+1·0	6·0		
28 30	Sun	60·9	67·8	+6·9	6·3		
30 10	Shade	68·7	69·0	+0·3	6·5		
31 10	Sun	69·0	75·7	+6·7			
21 23 18 0	Sun	36·8	43·8	+7·0			
19 30	Shade	44·0	43·9	−0·1	6·6		
20 30	Sun	43·9	50·0	+6·1	6·3		
22 0	Shade	50·1	49·9	−0·2	6·3		
23 0	Sun	49·9	56·1	+6·2	6·7	6·57	34·6
24 30	Shade	56·0	55·2	−0·8	6·8		
25 30	Sun	55·2	61·0	+5·8	6·6		
27 0	Shade	61·0	60·1	−0·9	6·7		
28 0	Sun	60·1	65·8	+5·7			
22 0 18 0	Sun	31·6	37·0	+5·4			
19 30	Shade	37·3	37·4	+0·1	5·7		
20 30	Sun	37·4	43·6	+6·2	6·2		
22 0	Shade	43·9	43·9	0·0	6·2		
23 0	Sun	43·9	50·1	+6·2	6·2	6·20	34·6
24 30	Shade	50·2	50·1	−0·1	6·3		
25 30	Sun	50·1	56·2	+6·1	6·3		
27 0	Shade	56·4	56·1	−0·3	6·5		
28 0	Sun	56·1	62·4	+6·3			
22 1 19 0	Sun	31·4	37·9	+6·5			
20 30	Shade	38·3	38·9	+0·6	5·8		
21 30	Sun	38·9	45·2	+6·3	5·9		
23 0	Shade	45·9	46·1	+0·2	6·2		
24 0	Sun	46·1	52·7	+6·6	6·3	6·13	31·9
25 30	Shade	53·1	53·6	+0·5	6·1		
26 30	Sun	53·6	60·2	+6·6	6·3		
28 0	Shade	60·7	60·8	+0·1	6·7		
29 0	Sun	60·8	67·8	+7·0			
22 1 46 0	Sun	27·2	33·9	+6·7			
47 30	Shade	34·0	33·9	−0·1	6·6		
48 30	Sun	33·9	40·3	+6·4	6·7		
50 0	Shade	40·4	40·0	−0·4	6·7		
51 0	Sun	40·0	46·3	+6·3	6·7	6·73	29·9
52 30	Shade	46·3	45·9	−0·4	6·5		
53 30	Sun	45·9	51·8	+5·9	6·7		
55 0	Shade	51·6	50·4	−1·2	7·2		
56 0	Sun	50·4	56·6	+6·2			

SEPTEMBER 22, 1843.

Makerstoun Mean Time of First Reading. d. h. m. s.	In Sun or Shade.	Observation. Begun. Sc. div.	Observation. Ended. Sc. div.	Change in 60s. Sc. div.	Effect of Sun. Sc. div.	Mean of Group. Sc. div.	Sun's Altitude. °
22 2 16 0	Sun	21·9	27·9	+6·0			
17 30	Shade	27·6	26·5	−1·1	6·9		
18 30	Sun	26·5	32·2	+5·7	7·0		
20 0	Shade	32·0	30·6	−1·4	6·9		
21 0	Sun	30·6	35·9	+5·3	6·6	6·74	27·2
22 30	Shade	35·2	33·9	−1·3	6·5		
23 30	Sun	33·9	39·0	+5·1	6·6		
25 0	Shade	38·6	37·0	−1·6	6·7		
26 0	Sun	37·0	42·1	+5·1			
22 2 46 0	Sun	20·5	25·8	+5·3			
47 30	Shade	25·4	24·0	−1·4	6·6		
48 30	Sun	24·0	29·1	+5·1	6·6		
50 0	Shade	28·6	27·0	−1·6	6·6		
51 0	Sun	27·0	32·0	+5·0	6·5	6·44	24·2
52 30	Shade	31·3	29·9	−1·4	6·3		
53 30	Sun	29·9	34·7	+4·8	6·3		
55 0	Shade	34·0	32·5	−1·5	6·2		
56 0	Sun	32·5	37·1	+4·6			
22 3 13 0	Sun	32·9	36·3	+3·4			
14 30	Shade	35·1	32·0	−3·1	6·2		
15 30	Sun	32·0	34·9	+2·9	6·1		
17 0	Shade	33·7	30·4	−3·3	6·5	6·36	21·2
18 0	Sun	30·4	33·8	+3·4	6·6		
19 30	Shade	32·1	29·0	−3·1	6·4		
20 30	Sun	29·0	32·3	+3·3			
22 4 30 0	Sun	32·0	34·1	+2·1			
31 30	Shade	33·0	30·2	−2·8	4·8		
32 30	Sun	30·2	32·0	+1·8	4·9		
34 0	Shade	30·7	27·4	−3·3	5·0		
35 0	Sun	27·4	28·9	+1·5	4·7	4·76	13·9
36 30	Shade	27·0	23·8	−3·2	4·3		
37 30	Sun	23·8	24·4	+0·6	4·6		
39 0	Shade	23·7	19·0	−4·7	5·0		
40 0	Sun	19·0	19·0	0·0			
22 4 56 0	Sun	25·7	27·0	+1·3			
57 30	Shade	25·9	22·9	−3·0	3·8		
58 30	Sun	22·9	23·3	+0·4	3·6		
5 0 0	Shade	21·9	18·5	−3·4	3·6		
1 0	Sun	18·5	18·4	−0·1	3·5	3·46	7·7
2 30	Shade	16·9	13·1	−3·8	3·7		
3 30	Sun	13·1	13·0	−0·1	3·2		
5 0	Shade	10·0	7·1	−2·9	2·8		
6 0	Sun	7·1	7·0	−0·1			

Sept. 21d 22h 30m. Barometer 30·268 in.; dry thermometer 58°·0; wet thermometer 54°·8; cloudless.
Sept. 21d 23h 29m. Barometer 30·267 in.; dry thermometer 60°·7; wet thermometer 56°·6.
Sept. 22d 0h 30m. Dry thermometer 63°·7; wet thermometer 58°·7.
Sept. 22d 1h 30m. Dry thermometer 67°·0; wet thermometer 60°·0.
Sept. 22d 2h 27m. Dry thermometer 68°·7; wet thermometer 61°·3.

ACTINOMETER.

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation. Begun.	Observation. Ended.	Change in 60s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
d. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
JANUARY 13, 1844.							
13 0 55 0	Sun	38·3	39·8	+1·5			
56 30	Shade	39·8	39·0	−0·8	2·1		
57 30	Sun	39·0	40·1	+1·1	2·0		
59 0	Shade	40·0	39·0	−1·0	2·0		
1 0 0	Sun	39·0	40·0	+1·0	2·1	2·06	12·2
1 30	Shade	39·7	38·6	−1·1	2·0		
2 30	Sun	38·6	39·5	+0·9	2·1		
4 0	Shade	39·1	37·9	−1·2	2·1		
5 0	Sun	37·9	38·8	+0·9			
13 1 27 0	Sun	23·0	24·0	+1·0			
28 30	Shade	23·9	23·3	−0·6	1·5		
29 30	Sun	23·3	24·2	+0·9	1·4		
31 0	Shade	24·1	23·7	−0·4	1·3		
32 0	Sun	23·7	24·5	+0·8	1·2	1·29	10·9
33 30	Shade	24·3	23·9	−0·4	1·2		
34 30	Sun	23·9	24·7	+0·8	1·2		
36 0	Shade	24·4	24·0	−0·4	1·2		
37 0	Sun	24·0	24·8	+0·8			
FEBRUARY 5, 6, 1844.							
5 23 49 53	Sun	20·0	20·3	+0·3			
51 23	Shade	20·8	21·0	+0·2	0·3		
52 23	Sun	21·0	21·7	+0·7	0·5		
53 53	Shade	22·0	22·3	+0·3	0·5		
54 53	Sun	22·3	23·3	+1·0	0·7	0·66	18·5
56 23	Shade	23·7	24·0	+0·3	0·8		
57 23	Sun	24·0	25·2	+1·2	0·9		
58 53	Shade	25·6	25·9	+0·3	0·9		
6 0 0 23	Sun	25·9	27·1	+1·2			
6 0 20 53	Sun	23·3	25·2	+1·9			
22 23	Shade	25·6	25·8	+0·2	1·8		
23 23	Sun	25·8	28·0	+2·2	2·1		
24 53	Shade	28·3	28·4	+0·1	2·2		
25 53	Sun	28·4	30·9	+2·5	2·5	2·23	18·6
27 23	Shade	31·0	31·0	0·0	2·3		
28 23	Sun	31·0	33·1	+2·1	2·2		
29 53	Shade	33·4	33·1	−0·3	2·5		
30 53	Sun	33·1	35·3	+2·2			
6 1 7 53	Sun	25·9	27·9	+2·0			
9 23	Shade	28·1	28·3	+0·2	1·7		
10 23	Sun	28·3	30·2	+1·9	1·8		
11 53	Shade	30·6	30·6	0·0	1·7		
12 53	Sun	30·6	32·2	+1·6	1·7	1·79	17·5
14 23	Shade	32·7	32·5	−0·2	1·8		
15 23	Sun	32·5	34·1	+1·6	1·8		
16 53	Shade	34·5	34·2	−0·3	2·0		
17 53	Sun	34·2	36·0	+1·8			

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation. Begun.	Observation. Ended.	Change in 60s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
d. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
FEBRUARY 6, 1844.							
6 1 48 53	Sun	24·0	25·9	+1·9			
50 23	Shade	26·1	26·2	+0·1	1·7		
51 23	Sun	26·2	28·0	+1·8	1·7		
52 53	Shade	28·3	28·3	0·0	1·8		
53 53	Sun	28·3	30·2	+1·9	2·0	1·91	15·5
55 23	Shade	30·2	30·0	−0·2	2·1		
56 23	Sun	30·0	32·0	+2·0	2·2		
57 53	Shade	32·0	31·9	−0·1	1·9		
58 53	Sun	32·0	33·7	+1·7			
6 2 38 53	Sun	33·0	34·6	+1·6			
40 23	Shade	34·9	34·4	−0·5	1·8		
41 23	Sun	34·4	35·5	+1·1	1·7		
42 53	Shade	35·7	35·1	−0·6	1·6		
43 53	Sun	35·1	36·0	+0·9	1·4	1·69	12·0
45 23	Shade	36·3	35·8	−0·5	1·5		
46 23	Sun	35·8	36·9	+1·1	1·8		
47 53	Shade	36·9	36·0	−0·9	2·0		
48 53	Sun	36·0	37·0	+1·0			
6 3 18 53	Sun	26·7	27·8	+1·1			
20 23	Shade	28·0	27·7	−0·3	1·3		
21 23	Sun	27·7	28·7	+1·0	1·2		
22 53	Shade	28·9	28·9	0·0	0·9		
23 53	Sun	28·9	29·8	+0·9	1·1	1·04	8·2
25 23	Shade	29·9	29·6	−0·3	1·1		
26 23	Sun	29·6	30·3	+0·7	0·9		
27 53	Shade	30·1	29·9	−0·2	0·8		
28 53	Sun	29·9	30·4	+0·5			
6 3 41 53	Sun	28·0	28·8	+0·8			
43 23	Shade	28·9	28·6	−0·3	1·0		
44 23	Sun	28·6	29·2	+0·6	0·9		
45 53	Shade	29·4	29·0	−0·4	1·2		
46 53	Sun	29·0	30·0	+1·0	1·3		
48 23	Shade	30·0	29·9	−0·1	0·7		
49 23	Sun	29·9	30·2	+0·3	0·5	0·97	5·6
50 59	Shade	30·3	30·0	−0·3	0·8		
51 59	Sun	30·0	30·6	+0·6	1·0		
53 23	Shade	30·7	30·2	−0·5	1·1		
54 23	Sun	30·2	30·9	+0·7	1·2		
55 53	Shade	30·9	30·4	−0·5	1·0		
56 53	Sun	30·4	30·8	+0·2			

Jan. 13d 1h 0m. Scud and cumuli on E. horizon; sky very milky about the Sun; a very slight breath of wind; dry thermometer 40°·2; wet thermometer 37°·3.

Jan. 13d 1h 39m. Dry thermometer 40°·4; wet thermometer 37°·2.

Feb. 5d 23h 55m. Patches of cirro-strati to SSE., 20° or 25° from the Sun; ground covered with snow; barometer 29·262 in.; dry thermometer 28°·9; wet thermometer 27°·4.

Feb. 6d 0h 20m. Patches of cirro-strati disappeared; sky quite clear. 24m. Highest reading of black bulb thermometer exposed to the Sun since 23h 50m, 63°·8. 28m. Slight breath of wind from SW. 32m. Dry thermometer 32°·6; wet thermometer 30°·9.

Feb. 6d 1h 10m. Slight wind. 19m. Dry thermometer 34°·9; wet thermometer 32°·9.

Feb. 6d 1h 51m. Patches of cirro-strati to SW., about 18° from the Sun; they disappeared at 55m. 59m. Dry thermometer 35°·2; wet thermometer 33°·2.

Feb. 6d 2h 44. Sky quite clear. 50m. Dry thermometer 35°·6; wet thermometer 33°·1.

Feb. 6d 3h 23m. Streaks of cirro-stratus to W. 27m. Streaks of cirrus coming up to about 10° above the Sun.

Feb. 6d 3h 41–58m. Observations made on the roof of the Observatory; some moisture gathers inside the glass case of the actinometer, which may probably affect the observations; at 55m the Sun getting behind trees.

ACTINOMETER.

Makerstoun Mean Time of First Reading.	In Sun or Shade.	Observation. Begun.	Observation. Ended.	Change in 60^s.	Effect of Sun.	Mean of Group.	Sun's Altitude.
d. h. m. s.		Sc. div.	Sc. div.	Sc. div.	Sc. div.	Sc. div.	°
SEPTEMBER 9, 1844.							
9 18 58 12	Sun	17·2	19·8	+2·6			
59 42	Shade	19·7	19·3	−0·4	2·9		
19 0 42	Sun	19·3	21·8	+2·5	3·0		
2 12	Shade	21·8	21·3	−0·5	2·9		
3 12	Sun	21·3	23·7	+2·4	3·0	2·89	13·5
4 42	Shade	23·6	23·0	−0·6	2·9		
5 42	Sun	23·0	25·2	+2·2	2·7		
7 12	Shade	25·2	24·7	−0·5	2·8		
8 12	Sun	24·7	27·0	+2·3			
9 19 34 12	Sun	27·6	29·7	+2·1			
35 42	Shade	29·7	29·1	−0·6	2·4		
36 42	Sun	29·1	30·7	+1·6	2·2	2·13	18·0
38 12	Shade	30·7	30·1	−0·6	1·8		
39 12	Sun	30·1	30·8	+0·7			
SEPTEMBER 9, 1844.							
9 19 53 22	Sun	43·0	46·1	+3·1			
54 42	Shade	46·1	45·8	−0·3	3·4		
55 42	Sun	45·8	48·9	+3·1	3·4		
57 12	Shade	49·0	48·7	−0·3	3·4		
58 12	Sun	48·7	51·8	+3·1	3·6	3·56	20·9
59 42	Shade	51·8	51·1	−0·7	3·8		
9 20 0 42	Sun	51·1	54·3	+3·2	3·8		
2 12	Shade	54·3	53·9	−0·4	3·5		
3 12	Sun	53·9	56·9	+3·0			
9 22 15 12	Sun	46·8	51·7	+4·9			
16 42	Shade	51·2	49·8	−1·4	5·9		
17 42	Sun	49·8	53·9	+4·1	5·6		
19 12	Shade	53·7	52·1	−1·6	6·0		
20 12	Sun	52·1	56·8	+4·7	5·9	5·69	35·8
21 42	Shade	56·7	55·8	−0·9	5·6		
22 42	Sun	55·8	60·4	+4·6	5·3		
24 12	Shade	60·2	59·6	−0·6	5·5		
25 12	Sun	59·6	64·8	+5·2			

Sept. 9^d 18^h 51^m. A few streaks of cirro-strati to S.; sky rather milky to E. 19^h 5^m. Patches of scud forming to W.

Sept. 9^d 19^h 34^m. Much scud forming to W., moving from about W.; clear near the Sun. 39^m. Scud approaching the Sun; observations bad; dry thermometer $52^{\circ}\cdot8$; wet thermometer $49^{\circ}\cdot0$.

Sept. 9^d 19^h 53^m. The scud has completely passed over the Sun, or has evaporated; patches on N. and S. horizon. 58^m. Dry thermometer $53^{\circ}\cdot3$; wet thermometer $49^{\circ}\cdot2$.

Sept. 9^d 22^h 15^m. Scud around but not near the Sun. 20^m. Dry thermometer $57^{\circ}\cdot7$; wet thermometer $51^{\circ}\cdot2$. 22^m. Patches of scud coming near the Sun. 23^m. A small patch very near the Sun, and dissipating. 26^m. Scud within 3° of the Sun. This cannot be considered a very good set of observations.

ADDITIONAL METEOROLOGICAL NOTES.

1844. d. h. m.	
Jan. 4 2 7.	The clouds have broken up about the zenith into watery-looking woolly cirro-stratus and thin milky haze, the horizon being still covered with dense clouds, and the sun quite obscured. About 60° of a remarkable halo (or iris) is visible; its appearance is between that of a rainbow and a coloured solar halo; its centre at or very near the zenith, and the radius somewhat greater than that of an ordinary halo, perhaps 25°; the brightest portion being between the zenith and the sun's place. This was seen for about 2^m or 3^m, when it disappeared, the clouds having become thicker in that part of the sky. Just as it disappeared, another became visible to the South at an altitude of about 35°, its convexity being turned in the same direction as that of the other; as only a small portion of it was visible, no estimation could be made of its radius; it was seen in an opening in the clouds similar to the first, and lasted about 1^m. During the whole time a bright elongated spot was in the NNE. at an altitude of 7° or 8°, like the sun's light struggling through a cloud; it disappeared about the same time as the second halo.
Feb. 20 21 .	A flock of wild geese seen flying towards SW.
23 1 .	Sea-gulls seen flying towards the East.
Mar. 4 18 6.	A meteor, somewhat brighter than Venus, burst near the star ζ Leonis; its course was in a line with Spica and ζ Leonis; only a few degrees of it were seen.
13 6 .	Flocks of wild geese and gulls flying towards the East.
16–19 .	Several gulls seen about this time.
22 7 .	A bat seen this evening.
Apr. 6 .	Large flocks of sea-gulls seen near the Observatory.
11 14 6—10.	Several shooting-stars seen; one moved from Benetnasch past Mizar; another from near the zenith towards the South; another from near Altair towards the South; another moved westward between ϵ Bootis, Mirach, and Alphecca; faint flashes of lightning, supposed to have been seen to SE. The sky was watched till 15^h; no more shooting-stars or lightning were seen. The latter is doubtful, as the stars twinkle much. 16^h. A shooting-star moved from near Cassiopeia towards the East.
17 7 .	Woolly, mottled, and cirro-cumulous cirri; mottled-edged and clearly-defined cirro-strati detached from each other; the woolly cirri, in large masses, radiating and moving from about S. by W., the cirrous edges being turned upwards; some very small patches of loose scud rising on SE. horizon, and moving from SW. (?); hazy to E.; cirro-strati considerably lower than the cirri. 8^h. Nearly as before; sheets of cirro-strati nearly cover the sky; long strings of cirri; a few patches of scud moving from about SW.
May 21 6 .	Fine cirri; cirro-cumulous cirro-strati dropping in ragged fragments to SE.; cumuli and cumulo-strati; scud on SE. horizon; the ragged patches of cirro-cumuli are finely-rounded cumuli on the tops, and only ragged below; solar halo.
July 18 4—7.	$4^h\ 0^m$. Huge piles of cumuli and cumulo-strati reaching almost round the horizon, and rising to 30° altitude; some of them with cirrous tops; sky milky. Thunder first heard at $4^h\ 49^m$ to NNW.; two other peals in about 2^m after, rather faint. 55^m. Lightning to NNW. at an altitude of 6°, the thunder heard in $14\frac{1}{2}^s$ after the flash; the flash had the appearance, to one observer, of streaks diverging from a ball, and, to another observer, of streaks meeting in a ball. 57^m. A streak of lightning farther West, followed by thunder in 21^s. $5^h\ 0^m$. Dark scud, nimbi; cumulo-strati, cirro-strati, cirrous haze; black, with rain to NW.; ragged patches of scud below, moving from various points from W., round by N. to E. 24^m. Thunder continuing. 34^m. Thunder in 5^s after lightning. 50^m. Thunder to SW. 54^m. Thunder to SSW., 30^s after lightning. $6^h\ 0^m$. Patches of loose scud moving from WNW., a few to S. moving from Eastward; a nearly homogeneous mass of dense cirro-stratous clouds above; thunder to SW.; the clouds have almost all lost the cumulous form; a range of small masses of cumuli to NE., where there is a patch of sky; rain$^{2-4}$ since 5^h. $6^h\ 1$—2^m. A peal of thunder to SW., which lasted 25^s, commencing softly, then bursting into irregular heavy rolls, and going off softly. $6^h\ 17^m$. Lightning to S. by E., near the horizon; thunder in 29^s. $6^h\ 40^m$. Slight peal to W.; large piles of cumuli, with level bases on horizon from N. to NE.;

ADDITIONAL METEOROLOGICAL NOTES.

1844.
d. h. m.

inky black to S.; scud, with ragged patches hanging beneath; patches of green sky. The rolls of thunder have generally commenced softly, then burst, and, finally, died away softly.

Aug. 8 11 20 and 30. Meteors shot from near η Ursæ Majoris to W. point of horizon.

9 12 Shooting-stars seen moving towards the N.; a flash of lightning (?) seen about 12^h 30^m.

9 14 8—10. Many meteors were seen at this time towards the S.; about 10 or 12 being seen in 2^m, only the Southern portion of the sky was seen by the observer, so that there were probably many more in other parts of the sky; most of those seen at this time were very faint.

s.

14 10 47. A meteor to SE.; direction of motion N. to S.; magnitude 2.

11 31. .... S.; .... NE. to SW.; .... 1.

13 51. .... SE., near the horizon.

14 19. Two meteors seen; one to SW.; the other about 5° above Jupiter, moving from NE. to SW., leaving a train of sparks; magnitude 1·2.

15 41. A meteor to S.; direction of motion NE. to SW.; magnitude 3.

14 16 21. .... passed through Delphinus; magnitude 3.

17 26. .... near the zenith, direction of motion NW. to SE.; faint.

18 43. .... to SW. .... NE. to SW.

19 4. .... to S. .... N. to S.

19 38. .... WSW. .... magnitude 3.

20 51. .... W., altitude 45° .... E. by N. to W. by S.; magnitude 1, leaving a train.

In the previous observations, the observer attended exclusively to the portion of the sky visible from the door of the observatory (towards the S.); he afterwards removed to the W. end of the observatory, and then had a view of the N., W., and S.

14 23 26. A meteor to WSW.; altitude 30°; direction of motion, ENE. to WSW.; magnitude 2.

24 1. .... to NW.; .... ESE. to WNW.; .... 3.

24 31. .... to NW.; .... 2.

25 31. .... in zenith; .... S. to N. .... 3.

29 26. .... in W., near horizon; .... ENE. to WSW.; .... 2.

34 24. .... in zenith; .... E. to W.; .... 1, leaving a train.

37 32. .... in NNW., altitude 30°; .... S. by E. to N. by W.; .... 2.

43 16. .... in SW., altitude 20°–25° .... NE. to SW.; .... 2.

The sky was for some time previous to and after this in an unfavourable state for observations of meteors, as thin clouds were passing over, sometimes obscuring half of the sky.

45 24. A meteor to NW., altitude 85°; direction of motion E. by N. to W. by S.; magnitude 3.

48 53. .... N. .... 2·3.

49 46. .... N., altitude 40°; .... SSE. to NNW. .... 2·3.

51 56. .... NW., altitude 75°; .... SE. to NW.

The observations of meteors were discontinued for a short time, the observer being engaged making the hourly observation; on his return at 15^h 5^m the sky was tolerably clear.

15 5 6. A meteor in zenith; direction of motion E. by S. to W. by N.; magnitude 3.

6 41. .... from 3° N. of α Cygni towards WSW.; .... 2.

9 31. .... 2° S. of Capella .... ENE.; .... 2.

14 33. .... 4° S. of Capella .... E. by N.;

16 46. .... NW. altitude 45° .... NW.; .... 2.

ADDITIONAL METEOROLOGICAL NOTES.

1844.	d.	h.	m.	s.	
Aug.	9	15	17	59.	A meteor from N. by E., altitude 30° towards NNE.; magnitude 1·2.
			18	51.	.... SSW., ... 15° .... SW. by S.; .... 2.
			20	36.	.... SE. .... SSE.; .... 1.
			22	11.	Two meteors from S. by W.; altitude 30° towards SW.; magnitudes 2 and 3.
			25	21.	A meteor from 10° S. of α Lyræ towards W. by S.; .... 1.
			26	5.	.... to SW., moving .... SW.; .... 3.
			29	53.	A meteor of the brightness of Jupiter moved from 7° W. of Benetnasch towards SW.; the line of motion making an angle of 60° with the W. horizon.
			38	37.	A meteor to SE. by E.; direction of motion N. by W. to S. by E.; magnitude 2.
			50	14.	.... E. moving almost due E.; magnitude 1.
					The twilight now became rather too strong for seeing any except very bright meteors.
					About $14^h\ 30^m$ there were appearances to NW. somewhat like Aurora; the magnets were slightly disturbed.
	12	12	8—20.		4 meteors were seen to Northwards, and 1 to E.; clouds covering about half of the sky.
	15	13	5—10.		4 meteors seen to NW.
		13	14	35.	A meteor seen to NW., altitude 45°; direction of motion SE. to NW.; magnitude 2·3.
			17	50.	.... SE. by E., altitude 45°; direction of motion NNW. to SSE.
			20	40.	.... N. by E., ... 30°; .... SSW. to NNE.; magnitude 3.
			23	35.	.... SSW., ... 25; .... NNE. to SSW.
			27	6.	.... in zenith; .... SSE. to NNW.; magnitude 1.
			29	58.	.... close to Capella; .... SW. to NE.; magnitude 3.
			30	52.	.... to N. altitude 50°; .... NW. to SE.; .... 2.
					The sky became cloudy after this.
Sept.	7	7	10—15.		Thunder first heard to SSW., faint. 25^m. Several flashes of lightning to SSW.; altitude of flash 1°; interval between flashes and thunder from 8^s to 16^s. 26–28^m. Several vivid thunder-*bolts*, apparently terminating in balls; one like a cima-reversa of beads; a flash about every 45^s. 30^m. Vivid bolt from horizon to 2° altitude at SSW. At this time thick scud from S. by W. 32^m. Faint flash, interval till peal 38^s. 33^m. Splendidly twisted bolt, interval till thunder 38^s. All the flashes and bolts seen on exactly the same point of horizon, SSW. $34\frac{1}{2}^m$. A flash from horizon to 4° altitude; it moved upwards like a straight bar; thunder in strange interrupted rumblings. 36^m. Two *twisted* bolts 4° separate, interval till thunder 22^s; before one of the peals a sound (*Scotticé*, sugh) like that of a distant waterfall. 36^m. Vivid flash, interval till thunder 35^s. $37\frac{1}{2}^m$. Vivid flash; loudest peal yet heard, interval 25^s; the rumbling of the thunder continued 22^s. $38\frac{1}{2}^m$. A very vivid flash, interval till thunder 15^s. $39\frac{1}{2}^m$. A very brilliant flash like a dotted rod, running up *two* or *three* times in rapid succession from the horizon; duration of the whole flashes about 1^s. 40^m. Three distinct flashes in one of great brilliancy. The flashes are now very frequent and brilliant. $42\frac{1}{2}^m$. One with interval till thunder of about 18^s. Drops of rain. 43^m. Three or four very vivid flashes, interval till thunder about 16^s; these lightnings looked like three bolts rising up vertically, and terminating in a sheet. Flashes very frequent, and a continued rumbling of thunder. Becoming very dark to SSW. 45^m. Flash, interval till thunder 11^s. 46^m. Flash, interval 19^s. At 46^m a flash to SSE., with interval till thunder of 15^s, and one to SSW., with interval of 8^s; the lightning to SSW., a very vivid bolt rising about 8°. 47^m. Flash, interval 18^s; duration of peal 30^s. 48^m. Flash to SW., interval 15^s; duration of thunder 30^s. 50^m. Very vivid flash, interval till thunder 14^s; duration 41^s. $50\frac{1}{2}^m$. Flash, interval till thunder 11^s; duration 30^s. 51^m. Very bright flash, interval till thunder 13^s. 52^m. Faint flash. 53^m. A very vivid, almost blinding flash, to S. by W., terminating in a bolt; interval till thunder 5^s; sharp

ADDITIONAL METEOROLOGICAL NOTES.

1844.
d. h. m. s.

report. 55^m. Vivid flashes, interval till thunder 13^s. $56\frac{1}{2}^m$. Flash, interval till thunder 5^s; very loud report in zenith, which made the observatory rattle. 58^m. Flash, interval till thunder 10^s. 59^m. Flashes very frequent at this time, intervals till thunder about 11^s. $8^h\ 0^m$. Rain ^{3}. 1^m. Flashes, with intervals till thunder of 12—20^s. 3^m. Intervals 9—20^s. Now more to westward. Flash, with interval till thunder of 23^s. 6^m. *Very* brilliant flash, quite *blinding* for a second or two, nearly overhead, a little to the south; a short sharp report at an interval of 6^s; another at an interval of 6^s. Rain $^{6-7}$. Flashes were seen at the following minutes:—9^m. Thunder in 10^s. $10\frac{1}{2}^m$. Thunder in 9^s. 11^m. Thunder in 9^s. 12^m. Thunder in 9^s, and another with thunder in 29^s. 14^m. Thunder in 22^s. 16^m. Thunder in 17^s. 17^m. Thunder in 6^s. 19^m. Thunder in 18^s. 21^m. Thunder in 40^s. No lightning was seen nor thunder heard till 35^m, when two or three flashes of sheet-lightning were seen, but no thunder heard. 38^m. A faint peal of thunder, 72^s after a flash of sheet-lightning. 40^m. A vivid flash and bolt to NE., altitude 15°; interval till thunder 10^s. 44^m. Flash to NE., interval till thunder 71^s. 45^m. Flash of sheet-lightning to NE.; thunder heard in 32^s; faint rumbles were heard at 8^s, and at 20^s after the flash, but they probably did not belong to it; duration of the last peal 30^s. 47^m. Two flashes, one to E. by N., and one to NE. 48^m. Flash to E. by N. $48\frac{1}{2}^m$. Flash to NE.; all sheet-lightning, no thunder heard. 49^m. Very small flash like an opening in the clouds to E. by N.; thunder heard in 31^s. 50^m. Flashes to NNW. and to E. 51^m. Splendid sheet of lightning to NE., shewing the contour of the cumulous clouds, which seemed as if edged with silver; thunder heard in 45^s. 53^m. A flash to NW., the thunder was not heard for 85^s, being the greatest interval between the lightning and thunder heard during this storm. $53\frac{1}{2}^m$. Flash to NE.; no thunder heard. 56^m. Flash to NNE.; thunder heard in 40^s. After this time there was a continuous *flickering* of sheet-lightning to E., mostly close to the horizon; no thunder heard; brighter flashes occasionally extending along about 30° of horizon, and diffusing upwards to an altitude of about 30°. A flash at $9^h\ 25^m$, very bright, diffused over the whole sky. The average number of flashes from about $9^h\ 0^m$ till $9^h\ 30^m$, was one every 15^s. About $9^h\ 20^m$ clouds covered 6 parts of the sky; dark to NE. $9^h\ 40^m$. Sheet-lightning still to E.; more overcast; very black to NE. $10^h\ 5^m$. Only occasional flashes now seen. The wind rose about $9^h\ 50^m$. A bright patch on horizon to E. by N.; the rest of the sky very dark. $10^h\ 20^m$. Rains $^{4-5}$. $10^h\ 55^m$. Two flashes. $11^h\ 40^m$. Two flashes. $12^h\ 0^m$. One diffused flash. $12^h\ 10^m$. Another like the last. $12^h\ 20^m$. The bright space on the ENE. horizon still continues with marked fluctuations in its intensity, the brightest part varying also in position. It has been so continuous, that it seems doubtful whether it is electric, or merely the reflection of some great fire. The brightest part moves through 4°, and is sometimes nearly spherical. The storm was watched throughout by two observers, B and W.

Note.—The thunder commenced to SSW., passed by the W. of the zenith to NE., and went off finally to E. This storm differs considerably from any observed here previously; although there were large piles of cauliflower cumuli and cumulo-strati with scud throughout the day, yet there was none of that tormented appearance which the clouds generally assume previously to and during a thunder-storm. The scud seemed, as long as it could be observed, to move nearly from the same quarter, S., or S. by W. The bolts of lightning seemed on every occasion to move nearly vertically and from below, upwards; in one instance, the bolt took the form of the cima reversa, and, like many of the others, seemed formed of a series of beads; some terminated in large balls enveloped in sheet lightning. Many of the flashes were so vivid, as to render sight difficult for some seconds. The rumbling of the thunder was often very irregular, having several breaks and starts, the sound being very various, from that of a distant waterfall to the sharp brattle of a railway-carriage starting.

Sept. 26 13. Woolly cirro-stratus, which seems moving rapidly towards the moon, but which never arrives at it.

14. As before, the clouds in the same positions; one band of cirro-stratus reaches from S. to about 6° altitude above W. Another band from S. to W. of meridian continues of the same magnitude as last hour, and seems moving rapidly towards the meridian, yet never attains it. Another band to E., rising to an altitude of 10° above ESE. These bands lie in a Southerly direction, and the positions noted are nearly as last hour.

ADDITIONAL METEOROLOGICAL NOTES.

1844. d.	h. m. s.	
Sept. 26	15.	The bands to E. and W. more broken than before, the central one, now completely on the meridian, seeming to form about 10° to the W. of it, and to dissolve about 10° to the E. of it.
	16.	The central band has now disappeared, those to the E. and W. still remain.
		When first observed, the moon was to the E. of the meridian, and the central band, which lay in a southerly and northerly direction, seemed moving with considerable rapidity from W. to E., but never progressed, retaining almost exactly the same form and position; at last the moon attained the band, and passed behind it, a fine lunar corona being produced by the cloud. Ultimately the moon passed to the W. of the cloud, the band having moved perhaps 15° more easterly in the course of three hours, and seeming during the whole period to *flow* from W. to E.
Oct. 3	8 57 30.	A meteor as bright as a star of the first magnitude moved from S., altitude 20° towards S. ½ W.
Oct. 7	10 56.	A meteor started from 1° below β Tauri, moving parallel to it and α Tauri through about 25°; the meteor left a train of sparks. Two or three meteors were seen afterwards, one of them moving across the zenith due W. $11^h\ 35^m$. A meteor moved from below β Tauri towards a point between Aldebaran and Betelgeux.
Nov. 7	10 50.	A bright meteor moved from about 4° E. of Jupiter towards the S by W.
Nov. 12	11 4—14.	Meteors looked for but none seen; sky partially covered with clouds.
Nov. 13	7 10—20.	Meteors looked for in the varying portions of sky but none seen.
	10 6.	A meteor to W by N. moved vertically downwards from altitude 45° to 35°; the sky was watched from 5^m till 15^m but no other meteors were seen.
	12 5—20.	Sky clouded 8·0; meteors looked for but none seen; shower at 20^m.
	13 5.	A meteor to SW., altitude 30°, moving towards SW.
	13 11.	A meteor between Taurus and Orion moving towards SSE.
	13 14 40.	A meteor moving through Cygnus towards NW.
	13 27.	A meteor to N., altitude 20°, moving westward nearly horizontally.
	13 33.	.... SE., ... 25°, ... towards WSW.
	13 34.	.... from 4° W. of ξ Ursæ Majoris, moving towards N by E.
	13 36 20.	.... to NNW., altitude 35°, moving towards NNW; clouds to W.
	13 39.	.... S., ... 25°, ... SE.
	13 40.	.... ENE., ... 15°, ... NE.; sky clouded 8·0; sky to NE.
	14 8.	Pretty clear to N.
	14 13 25.	A meteor to ENE., altitude 45°, moving towards ENE.
	14 15 20.	.... N., ... 35°, ... N by E; magnitude 2.
	14 30.	.... between Aldebaran and α Orionis, moving towards W by S.; cloudy to N. and round the horizon.
	14 36.	A meteor passed through Orion towards the SE.; clear to S. 42^m. Clouds coming on.
	17 5.	Sky clouded 6·0, chiefly to W.; clear to NE. 15—30^m. Most of the sky clear.
	17 12.	A meteor to NE., altitude 30°, moving towards NE.
	19.	.... NNW.
	22.	.... NE., altitude 40°, moving towards ENE.
	25.	.... NNW., ... 20°, ... NW.
	27.	.... NW., ... 30°, ... NNW.
	17 35.	Sky becoming overcast.
Nov. 14	9 34.	A meteor passed from 1° N. of α Andromedæ to 1° S. of β Pegasi; magnitude 1·2.
	42.	.... 3° W. of α Draconis towards the head of Draco.
	46.	.... to ESE., altitude 15°, moving towards SE.; faint.
	56.	.... from 3° S. of α Andromedæ towards SW.
		Most of the meteors seen were of about the third magnitude.

ADDITIONAL METEOROLOGICAL NOTES.

1844.
d. h. m.

Nov. 22 7 45–50. Thin cirrous clouds over the Moon, forming a whitish corona of two or three rings, the diameter of the greatest being about 1°; below this a thicker watery-like cirrous cloud at a short distance from, and on one side of, the Moon; this cloud seems to move, but still keeps at about the same distance from the Moon; it forms a portion of a double corona, which assumes various forms, being at different times elliptical, *boomarang*-shaped, circular, and square; the order of the colours, reckoning from the Moon outwards, is—yellowish, passing into orange, next a dark space, then blue and orange again; the outer side of the inner orange may be 3° to 5° radius, and of the outer orange $4\frac{1}{2}$° to $6\frac{1}{2}$° radius.

Nov. 22 11. Growing patches of scud; woolly, linear, and watery cirri above; the watery-looking cirri appear to *move* but never to *progress*.

Nov. 23 8 5. A band of nebulous light, like a broad and not very bright pencil of aurora, stretching from N by E. point of horizon to 20° past the zenith, the upper edge of the band being 5° to W. of the zenith; a considerable quantity of clouds over the sky, the band of light being seen through breaks. There are also two or three smaller bands on each side of the broad one. 10^m. Obscured by clouds. 25^m. A band still continues in nearly the same position, estimated to be 6° broad, and consisting of six or eight separate streaks lying in juxtaposition; separately having a considerable resemblance to the cometary beam of aurora seen on March 29, 1843. (See Volume of Observations for 1843, page 61.) The band can be traced from the horizon at N. $13\frac{1}{2}$° E. to S. 44° W., altitude 28°; at the centre of the arch, azimuth W. 10° N., the altitude is 59°. 36^m. The clouds clearing off a little to S.; the band is observed to stretch to within 5° of the horizon, being there cut off from view by a band of cirro-stratus; the azimuths of the extremities are N. 8° E. and S. 13° W.; altitude of summit, upper edge 80°, lower edge 48°, the measurements rough. 40^m. A meteor shot from β Cygni, at the summit of the arch, towards the S. in the direction of the band; N. extremity obscured by clouds; S. extremity increased in intensity and breadth; the light dullish white; a very bright portion to S., altitude 24°. 45^m. A streak to the E. of the arch, springing from the S. extremity, has newly appeared, and ultimately extends across the zenith. 50^m. The breadth of the band at the summit is 40°, extending from altitude 50° to zenith; the structure as of a series of fibres more or less dense, 8° or 10° of it being nearly uniform. 55^m. Another measurement of the breadth of the arch at the summit gives the breadth 51°, the lower altitude being 39° and the upper 90°; no error in the previous measurement, the arch having extended farther W. $9^h\ 0^m$. Sky obscured by clouds. $9^h\ 30^m$. Sky clear; the streaks at first scarcely visible, afterwards observed faint in the zenith. A streak observed, very fine and faint, in the same direction as before described, its length about 10°; gradually creeping up, increasing in breadth and intensity, and afterwards extending over the zenith; three or four afterwards forming as before. It may be remarked, that the atmosphere seems very humid, a dull milky light being around the Moon, while patches of scud are continually *forming;* at one time lunar beams observed, caused by the rays shining through holes in the clouds; but the Moon is completely to the E. of the bands observed and can have no connection with them.

It is very difficult to determine whether these bands are cirrous streaks or not; but their well defined edges, varying breadth and brightness, and great extent of space, leave upon the observers the impression that this is a phenomenon of a very different kind. It is certainly very strange that the streaks should re-form in exactly the same position. The Moon being nearly full (and at about $8^h\ 50^m$ having an altitude of about 35°, and being 50° to E. of meridian), rendered it more difficult to watch the varying phases of this phenomenon. No upper range of cirrous clouds was observed either to E. or W. of this band, which was evidently above the cirro-cumuli and scud. Observers, B. W. and H.

There was a magnetic disturbance which finished immediately before this phenomenon was noticed.

Nov. 24 8. Streaks of cirrus in different parts of the sky, all lying N. and S.; some of them can be traced throughout the whole extent; they have a considerable resemblance to the appearance observed on the preceding evening but much less distinct.

DATES OF FLOWERING OF PLANTS, &c.

1844.

Jan. 28. Galanthus nivalis, in flower.

March 4. Draba verna, in flower.

10. Fragaria vesca, in flower.

17. Agraphis nutans, leaves above ground.

— Mercurialis perennis, beginning to flower.

— Cratægus Oxyacantha, in leaf.

22. A bat seen.

23. Buxus sempervirens, in flower.

— Ribes Grossularia, in leaf.

27. Mercurialis perennis, in flower.

29. Ranunculus Ficaria, in flower.

— A tortoise-shell butterfly (Vanessa urticæ) seen.

30. Primula acaulis, in flower.

April 1. Pulmonaria officinalis, in flower.

— Æsculus Hippocastanum, in leaf.

— Syringa vulgaris, in leaf.

3. Ulmus montana, in flower.

7.? Larix Europæa, in leaf.

13. Pyrus aucuparia, in leaf.

14. Viola canina, in flower.

— Myosotis arvensis, in flower.

15. Ulmus montana, in leaf.

16. Alnus glutinosa, in flower.

— A swallow (Hirundo rustica?) seen.

17. Saxifraga granulata, in flower.

— Myosotis palustris (?), in flower.

18. Fraxinus excelsior, in flower.

— Platanus occidentalis, in leaf.

— Betula alba, in leaf.

— Chrysosplenium oppositifolium, in flower.

19. Alnus glutinosa, in leaf.

— Ulmus montana, green seed-vessels very distinct.

— Cerasus Padus, in leaf; must have been in leaf by the 14th.

20. Prunus spinosa, in leaf and flower.

— Helianthemum vulgare, in flower.

— Galium cruciatum, in flower.

— Primula veris, in flower.

— Ranunculus acris, in flower.

1844.

April 20. Lychnis diurna, in flower.

21. Pyrus communis (cultivated), in full blossom; probably in flower by the 14th.

— A wasp (Vespa vulgaris) seen.

22. Cerasus Padus, in full blossom; probably in flower by the 14th.

24? Agraphis nutans, in flower.

— Caltha palustris, in flower.

25. Juglans regia, in leaf.

— Fagus sylvatica, in leaf.

27. Berberis vulgaris, found well in leaf; probably in leaf by the 22d.

28. Tilia Europæa, in leaf.

— Seeds of Ulmus montana well forward.

May 1. Quercus Robur, in flower.

— Fraxinus excelsior (young tree), in leaf.

3. Erysimum Alliaria, in flower.

— Veronica Chamædrys, in flower.

— Syringa vulgaris, in flower.

— The cuckoo (Cuculus canorus) heard for the first time.

5. Acer Pseudo-platanus, in flower.

7. Fraxinus excelsior (from which flowering noted), in leaf.

8. Cratægus Oxyacantha, in flower.

15. Seed-vessels of Ulmus montana well filled.

18. Juglans regia, in flower.

June 6. Quercus Robur (young tree), only leafed.

8. Fraxinus excelsior (old tree), leafed.

15. Swifts (Cypselus apus?) first seen.

30. Valeriana officinalis, in flower.

— Ligustrum vulgare, in flower.

— Spiræa salicifolia, in flower.

July 13. Tilia Europæa, in flower.

Aug. 1. Ulmus montana, leaves coloured.

17. Fraxinus excelsior, leaves nearly off one tree, and in about a fortnight the greater part of the leaves off the trees.

20. Quercus Robur, leaves coloured.

Oct. 4. Saw a swallow (Hirundo rustica?).

MAKERSTOUN MEAN TIME OF THE COMMENCEMENT OF MORNING SONG OF BIRDS.

	d.	h.	m.		
April	15	4	1	A.M.	Thrush.
	16	3	50	...	......
	17	4	8	...	......
	18	4	2	...	......
	19	3	57	...	......
	20	3	42	...	......
	22	3	41	...	......
	24	3	31	...	......
	26	3	19	...	......
	27	3	20	...	......
	29	3	3	...	Lark.
		3	15	...	Thrush.
	30	3	4	...	Lark.
		3	6	...	Thrush.
May	1	3	3	...	Lark.
	2	2	44	...	Lark.
		2	57	...	Thrush.
	3	2	33	...	Lark.
		3	0	...	Thrush.
	4	3	4	...	Lark.
	6	2	44	...	Lark.
		3	4	...	Thrush.
	7	2	40	...	Lark.
		3	4	...	Thrush.
	8	2	30	...	Lark.
		2	51	...	Thrush.
	9	2	15	...	Lark.
		2	41	...	Thrush.
	10	2	27	...	Lark.
		2	55	...	Thrush.
	11	2	32	...	Lark.
		3	1	...	Thrush.
	13	1	58	...	Lark.
		2	36	...	Thrush.
	14	2	18	...	Lark.
		2	45	...	Thrush.
	15	1	49	...	Lark.
		2	37	...	Thrush.
	16	1	58	...	Lark.
		2	34	...	Thrush.
	17	2	15	...	Lark.
		2	45	...	Thrush.
	18	1	58	...	Lark.
		2	30	...	Thrush.
	20	2	35	...	Lark.
		2	40	...	Thrush.
	21	2	50	...	Thrush.
	22	2	19	...	Lark.
		2	35	...	Thrush.
	23	1	30	...	Lark.
		2	15	...	Thrush.
	24	1	50	...	Lark.
		2	20	...	Thrush.
	27	2	10	...	Lark.
May	27	2	27	A.M.	Thrush.
	28	1	43	...	Lark.
		2	22	...	Thrush.
	29	1	42	...	Lark.
		2	20	...	Thrush.
	30	1	40	...	Lark.
		2	25	...	Thrush.
	31	1	51	...	Lark.
		2	17	...	Thrush.
June	1	1	59	...	Lark.
		2	14	...	Thrush.
	3	1	32	...	Lark.
		2	1	...	Thrush.
	4	1	35	...	Lark.
		2	3	...	Thrush.
	5	1	47	...	Lark.
		2	3	...	Thrush.
	6	1	35	...	Lark.
		2	2	...	Thrush.
	7	1	27	...	Lark.
		1	59	...	Thrush.
	8	1	30	...	Lark.
		1	59	...	Thrush.
	10	1	20	...	Lark.
		1	43	...	Thrush.
	11	1	27	...	Lark.
		1	38	...	Thrush.
	12	1	56	...	Lark.
		2	13	...	Thrush.
	13	1	40	...	Lark.
		1	58	...	Thrush.
	14	1	58	...	Thrush.
	15	1	53	...	Thrush.
	17	1	20	...	Lark.
		1	43	...	Thrush.
	18	1	56	...	Lark.
		2	12	...	Thrush.
	19	2	4	...	Lark.
		2	15	...	Thrush.
	21	1	50	...	Lark.
		2	7	...	Thrush.
	22	1	27	...	Lark.
		1	41	...	Thrush.
	24	1	23	...	Lark.
		1	45	...	Thrush.
	25	2	7	...	Lark.
		2	14	...	Thrush.
	26	1	53	...	Lark.
		2	12	...	Thrush.
	27	1	42	...	Lark.
		2	6	...	Thrush.
	28	1	59	...	Lark.
		2	5	...	Thrush.
	29	2	0	...	Lark.
June	29	2	24	A.M.	Thrush.
July	1	2	0	...	Thrush.
	2	1	40	...	Lark.
		2	7	...	Thrush.
	3	1	50	...	Lark.
		2	19	...	Thrush.
	4	1	55	...	Lark.
		2	20	...	Thrush.
	5	1	48	...	Lark.
		2	12	...	Thrush.
	6	1	45	...	Lark.
		2	25	...	Thrush.
	8	2	13	...	Lark.
		2	25	...	Thrush.
	9	2	20?	...	Lark.
		2	36	...	Thrush.
	10	2	35	...	Thrush.
	11	2	0	...	Lark.
		2	0	...	Thrush.
	12	2	40	...	Thrush.
	15	2	55	...	Lark.
		2	55	...	Thrush.

	d.	h.	m.		
May	2	2	55	...	Cock crow.
	3	2	44	...	Lambs bleating.
		2	49	...	Cuckoo.
		3	5	...	Pheasant.
	4	2	44	...	Cock crow.
		2	45	...	Lambs bleating.
		3	6	...	Pheasant.
	6	2	44	...	Lambs bleating.
			58	...	Sandpiper.
	8	2	40	...	Cock crow.
			42	...	Lambs bleat.
	9	2	24	...	Lambs.
			40	...	Heron.
	10	2	8	...	Sandpiper.
		2	22	...	Lambs.
	11	2	30	...	Lambs.
			38	...	Cock.
	14	2	28	...	Lambs.
	15	1	50	...	Cock.
		2	30	...	Sheep.
		2	30	...	Pigeon.
	16	1	48	...	Lambs.
	17	1	40	...	Sheep.
	18	1	50	...	Sheep.
	20	2	11	...	Sandpiper.
	22	2	35	...	Lamb.
		2	30	...	Landrail.
	23	1	45	...	Lambs.
	31	4	4	...	Cuckoo.
June	1	2	3	...	Sandpiper.

MAKERSTOUN MEAN TIME OF THE COMMENCEMENT OF MORNING SONG OF BIRDS.

	d.	h.	m.		
June	5	1	40	A.M.	Lambs.
	7	1	35	...	Swallow.
	7	1	42	...	Sandpiper.
	10	1	4	...	Sandpiper.
		1	33	...	Swallow.
	17	1	24	...	Sandpiper.
	24	1	0	...	Landrail.
	25	1	45	...	Swallow.
		1	55	...	Woodpigeon.
	29	2	20	...	Swallow.
	31	0	15	...	Landrail.
		0	20	...	Sandpiper.
July	2	1	32	...	Landrail.
		1	50	...	Cock.
	3	1	29	...	Swallow.
	4	1	0	...	Landrail.
		1	19	...	Cock.
		1	57	...	Swallow.
		11	10	P.M.	Landrail.
		10	10	...	Swallow.
	5	1	58	A.M.	Swallow.
July	5	2	2	A.M.	Sandpiper.
		2	12	...	Woodpigeon.
	8	0	14	...	Landrails.
		0	14	...	Swallow.
		0	35	...	Wren?
		2	5	...	Cock.
	9	1	51	...	Swallow.
	10	1	22	...	Landrail.
		1	55	...	Cock.
		2	0	...	Swallow.
		2	5	...	Woodpigeon.
	11	2	10	...	Swallow.
		2	30	...	Landrail.
		3	0	...	Lark and Thrush.
	12	1	50	...	Swallows.
	13	2	5	...	Swallow.
		2	55	...	Wren.
	15	2	10	...	Swallow.
		2	55	...	Blackbird and Lark.
July	16	2	0	A.M.	Landrail.
		3	0	...	Wren.
	17	3	10	...	Wren?
		4	10	...	Blackbird?
	19	3	15	...	Partridges.
			20	...	Jackdaw and Woodpigeon.
	20	2	17	...	Swallow.
			19	...	Cock.
	23	2	25	...	Swallow.
		3	10	...	Blackbird and other birds.
	24	2	15	...	Swallow.
		3	0	...	Wren and Pigeon.
	26	3	0	...	Swallow.
	29	2	35	...	Swallow.
	30	2	27	...	Swallow.
Aug.	1	2	35	...	Swallow.

June 5. It may be remarked, generally, that in a minute or two after the first lark is heard, several others are heard; in a minute after the first thrush, many thrushes; in about three minutes thereafter, the blackbird and other birds commence their song. In several instances, it has not been certain whether it was the thrush or the blackbird which was heard first.

July 8. Landrails and swallows throughout the night.

July 13. The wren is now the principal songster in the morning.

July 16, &c. Landrails heard throughout the night.

ABSTRACTS OF THE RESULTS

OF THE

MAGNETICAL OBSERVATIONS,

MADE AT THE OBSERVATORY OF

GENERAL SIR T. M. BRISBANE, BART.,

MAKERSTOUN.

1844.

TABLE I.—Mean Westerly Declination for each Civil Week-Day, Week, and Month, in 1844.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	25°. ′	25°. ′	25°. ′	25°. ′	25°. ′	25°. ′	25°. ′	25°. ′	25°. ′	25°. ′	25°. ′	25°. ′
1	19·78	20·31	17·76	18·11	16·84	16·30	15·92	16·66	[17·35]	19·16	14·78	[14·97]
2	20·89	19·80	17·64	20·22	17·59	[16·66]	17·01	18·10	18·10	16·49	14·75	14·26
3	21·14	18·15	[17·35]	19·08	18·10	16·70	16·28	16·00	17·33	17·01	[14·70]	14·40
4	21·06	[19·44]	17·07	18·67	17·66	16·88	16·42	[16·90]	17·49	16·70	14·95	15·33
5	21·24	20·50	17·08	18·05	[17·82]	16·92	16·91	16·55	17·62	16·00	13·77	14·10
6	20·98	19·73	17·43	17·24	18·53	16·80	16·07	16·57	16·74	[15·88]	14·80	14·57
7	[20·83]	18·18	17·85	[18·17]	17·49	17·01	[16·74]	17·50	17·45	15·06	14·37	14·57
8	20·29	19·59	18·33	18·05	17·53	16·03	18·03	18·16	[16·99]	15·32	13·91	[14·53]
9	20·32	19·88	17·73	18·04	18·28	[16·64]	17·01	19·03	16·50	15·18	13·78	14·49
10	21·07	18·64	[18·01]	18·99	17·95	16·43	15·98	17·23	16·90	15·19	[14·15]	14·73
11	21·53	[19·31]	18·06	17·70	17·29	16·52	16·48	[17·74]	16·74	15·27	14·33	14·72
12	20·51	19·31	18·70	18·68	[17·51]	17·07	16·24	16·90	16·59	15·40	13·92	14·38
13	20·68	19·34	17·39	18·40	17·54	17·33	16·77	17·67	16·89	[15·07]	14·61	14·70
14	[20·86]	19·08	18·32	[18·48]	17·36	16·78	[16·43]	17·48	17·01	14·48	14·63	14·65
15	20·61	19·71	18·05	18·11	16·63	16·73	16·69	16·83	[16·93]	15·56	14·80	[14·42]
16	20·64	19·23	18·21	17·75	17·68	[16·92]	16·19	17·22	18·35	14·51	12·67	13·99
17	21·17	19·60	[17·97]	20·24	17·73	16·22	16·24	17·08	16·26	14·93	[14·24]	14·51
18	20·89	[19·15]	17·91	18·10	17·36	17·26	15·78	[17·19]	16·48	15·76	13·97	14·27
19	20·63	18·64	17·68	18·15	[17·49]	17·23	16·22	17·32	16·83	14·77	14·74	14·46
20	20·06	18·63	17·67	18·54	17·79	16·38	16·19	17·51	16·25	[15·61]	14·63	12·61
21	[20·61]	19·11	18·07	[18·19]	17·47	17·01	[16·00]	17·18	16·80	18·16	15·08	15·48
22	20·77	18·69	18·36	18·24	16·90	16·19	14·91	17·12	[16·63]	14·60	14·33	[14·13]
23	21·04	18·56	18·30	18·10	17·84	[16·25]	16·72	19·46	17·34	15·45	13·38	14·27
24	20·25	18·33	[18·01]	18·03	16·89	15·80	16·21	17·62	16·58	14·29	[14·51]	13·90
25	22·83	[18·13]	18·18	17·25	16·55	16·48	17·12	[17·76]	15·98	13·50	15·07	14·05
26	20·25	18·52	17·88	18·26	[16·68]	15·64	16·66	17·17	15·27	14·31	14·65	14·23
27	19·01	18·17	17·29	18·64	16·17	16·38	17·19	17·15	19·60	[14·66]	14·57	14·14
28	[20·10]	16·50	18·41	[17·60]	16·48	16·47	[16·92]	18·01	17·52	14·49	15·86	12·88
29	19·92	17·15	17·72	18·00	16·18	15·94	17·23	17·23	[17·82]	15·11	15·06	[13·30]
30	19·30		16·65	16·64	16·21	[16·33]	15·19	16·67	18·91	16·26	14·93	11·92
31	19·26		[18·36]		16·98		18·15	17·28		15·14		13·85
Mean	20·60	18·93	17·84	18·28	17·30	16·58	16·51	17·36	17·10	15·49	14·47	14·21

As no observations were made on Sundays, the places which the means for Sundays would have occupied have been filled up by the means of the three preceding and three succeeding days; these means are therefore weekly means, and may be considered as approximate means for the Sundays. They have been used in the summations having reference to the Moon's position, as it was considered that the want of any means on these days would affect the accuracy of the results more seriously than the use of the approximations.

MEAN DECLINATION AND THE SECULAR CHANGE.

The mean westerly declination for the year 1844, ...	= 25° 17′·06
The mean westerly declination for the year 1843 (1843, p. 221), .	= 25 22 ·85
Hence, the value of the *secular change* for the year 1843–4, . .	= − 5 ·79
The secular change for the year 1842–3 (1843, p. 224), ...	= − 5 ·62

We may therefore conclude that the yearly diminution of westerly declination was nearly constant from 1842 to 1844, or that the north extremity of the declination needle approached the true north at the average rate of 5′·70 a-year.

ANNUAL PERIOD.

An examination of the monthly means at the foot of Table I. will shew that though the amount of change from year to year be nearly constant, this is not the case from month to month; on the contrary, the north extremity of the needle at times moves towards the west. It is not very evident, however, from these means, whether the rate or sign of motion has any well-marked relation to the season of the year. In order to render this more apparent, we may separate the variations into two parts; one, consisting of an easterly motion (the north end of the needle being always considered), at the constant rate of 0′·48 a-month, or 5′·70 a-year; the second, of motions which are alternately to the east and to the west of the same mean position,—the latter being evidently the only portion which can have any relation to season. If, then, n be the number of the month from January, and we add the quantity 0′·48 n to each monthly mean, we shall obtain the following quantities:

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
20′·60	19′·41	18′·80	19′·72	19′·22	18′·98	19′·39	20′·72	20′·94	19′·81	19′·27	19′·49

From which it would appear that the westerly declination was a minimum in March and a maximum in September; secondary minima occurring in June and November, and secondary maxima in January and April. The whole range of these means, however, is only 2′·12, and as the effect of 10° of torsion in the suspension thread is 0′·84, it is quite possible that some of these variations may be due to this source of error. Though an examination of the amount of torsion, found at different times in the suspension thread, will shew that the error due to torsion is, in general, small,* yet it will be desirable to destroy accidental errors as much as possible by taking the means of groups; making use, for this purpose, of the mean for December 1843 = 18′·72, and for January 1845 = 19′·85 (both reduced for secular change to January 1844), and noting the mean for each three months as the mean for the middle month, we obtain the following quantities for 1844:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
19′·58	19′·60	19′·31	19′·25	19′·31	19′·20	19′·70	20′·35	20′·49	20′·01	19′·52	19′·57

These numbers indicate a distinct annual period, consisting of a principal minimum about May, a principal maximum between August and September, and probably of a secondary minimum in November, and of a secondary maximum between January and February. The variations upon which the latter portion of this result depends are too small to be entitled to much confidence alone; the Observations for 1843 have, accordingly, been discussed anew for the purpose of comparison with this result. In the volume for 1843, the monthly means from 9 daily observations were corrected by quantities obtained from the 24 hourly observations of 1844 (1843, p. 221). Correcting the means for 1843, and for December 1842, by the complete series in 1844 and 1845, we have the following quantities:—

Dec.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
24′·64	25′·50	24′·91	24′·35	23′·79	23′·51	25′·25	23′·59	22′·33	20′·92	21′·75	19′·09	19′·20

When these numbers, and the mean for January 1844 (20′·60), are reduced for secular change to January 1843, and means of each three months taken as in the above instance for 1844, we have,

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
25′·02	25′·40	25′·31	25′·32	26′·10	26′·52	26′·60	25′·64	25′·51	24′·91	24′·81	24′·91

From these means for 1843, the principal minimum occurs in November, the principal maximum between June and July; a secondary minimum between March and April, and a secondary maximum in February; the greatest difference in the epochs for the two years is found in the period of the principal maximum, which occurs two months earlier in 1843 than in 1844. This difference may be explained by the gradual destruction of the suspension thread, and the substitution of a new one in June 1843; when this and the small range of the variations are kept in remembrance, the resemblance in the results for the two years will appear considerable.

On taking the mean of the results for the years 1843 and 1844, we have,

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
22′·30	22′·50	22′·31	22′·28	22′·70	22′·86	23′·15	23′·00	23′·00	22′·46	22′·16	22′·24

* See the foot-notes to the Hourly Observations of Magnetometers, and the article *Declinometer* in the Introduction.

Very nearly the same result as may be deduced from these quantities is exhibited by the simple means for each of the succeeding years, 1845 and 1846; it is therefore stated with considerable confidence, *that the magnetic declination at Makerstoun has an annual period, consisting of a motion of the north end of the needle towards the west from April till August or September, of an easterly motion from September till the end of November, of a secondary westerly motion from thence till February, and of an easterly motion from thence again till April.*

It should be remarked that this result differs little from what might be at once concluded from the simple monthly means for 1844, and (with the exception of the principal westerly deviation) from the simple monthly means for 1843; in the consideration of the annual period from the means for 1843 (1843, p. 221), the secondary maximum and minimum were overlooked as possibly accidental, which might have been done still but for the strong confirmation of each successive year's observations.

Differences of the Daily Means from the Monthly Means.—The following are the means of these differences for each month in 1844:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0′·56	0′·72	0′·38	0′·53	0′·53	0′·38	0′·54	0′·52	0′·70	0′·87	0′·49	0′·50

The apparent law of these values is rendered more regular by taking the means for *each* three months, in the manner already indicated for the monthly means, as the mean for the middle month; these are:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0′·59	0′·55	0′·54	0′·48	0′·48	0′·48	0′·48	0′·59	0′·70	0′·69	0′·62	0′·52

The average differences are therefore a minimum about May, and a maximum about September, a secondary minimum occurring about December, and a secondary maximum about January; the latter are more distinct in the simple means. It is impossible not to remark the coincidence of these epochs with those stated already for the mean westerly declination. The result may be thus generalized:—The average difference of the daily means from the monthly means in 1844 was a minimum when the mean westerly declination was least, and a maximum when it was greatest.

The previous quantities may perhaps be considered as some measure of the amount of disturbances of the daily mean positions in each month of the year, without distinguishing, however, between what we may term consecutive disturbances, or those which are due to a regularly varying cause (as the lunar phase or declination) and intermittent disturbances, or those which are irregular in amount, and occur at intervals. Since the sum of the positive differences is necessarily equal to the sum of the negative differences, if we divide half the sum in each month by the number of days for which the mean westerly declination was greater than the monthly mean, and also by the number of days for which it was less, we shall have the average of the positive and of the negative differences in each month. These, with their differences, are as follow:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	+0′·48	0′·70	0′·35	0′·77	0′·44	0′·40	0′·61	0′·70	0′·87	1′·31	0′·40	0′·38
	−0′·69	0′·75	0′·41	0′·41	0′·65	0′·37	0′·49	0′·41	0′·58	0′·66	0′·63	0′·72
Diff.,	−0′·21	−0′·05	−0′·06	+0′·36	−0′·21	+0′·03	+0′·12	+0′·29	+0′·29	+0′·65	−0′·23	−0′·34

In the year 1844, the greatest departures of the daily mean positions from the monthly means were towards the west in the months of August, September, and October, and towards the east in November, December, and January.

The following Table was formed from Table I. The means of westerly declination on the 12 days between January 4 and December 23, 1844, on which the Moon was 15, 16, 17 . . . days old, having been obtained, they were corrected for secular change at the rate of +0′·0156 *per diem*; the differences between the lowest mean and the others are inserted in the first portion of Table II. As in some lunations the 29th day was wanting, the mean westerly declination for the 28th and 0th day was used instead.

For the variations with reference to the moon's declination, the 13 days on which the moon was farthest north between January 3 and December 23, 1844, were numbered 0, the days after these were numbered 1, 2, 3, . . . 26 or 27; in cases in which the moon was again farthest north at the 27th day, the mean westerly declination for the 26th and 0th day was used for the 27th, the mean westerly declination for each day was then obtained, and after correction for secular change as before, the differences from the lowest mean were entered in the following table.

For the variations with respect to the moon's distance from the earth, the days between January 7 and December 30, 1844, before and after apogee and perigee, were numbered from 1 to 7, in some instances there

were only 11 days between apogee and perigee, or between perigee and apogee; in these cases, the 6th day was counted as the 6th and 7th before and after the two epochs; where there were 12 days of interval, the 6th before apogee was counted as the 7th after perigee, and *vice versa*; when there were 13 days of interval, the 7th was counted as the 7th before the one epoch and after the other; and when there were 15 or 16 days, the mean westerly declination for the 7th and 8th day was used as a mean for the 7th day. The mean westerly declination for each of the 13 days so numbered was then obtained and corrected for secular change, as in the first case; the differences from the lowest mean are given below.

TABLE II.—Mean Variations of Westerly Declination after Eliminating the Secular Change, with reference to the Moon's Age, Declination, and Distance from the Earth, for 1844.

Moon's Age.	Variations of West Declination.	Moon's Age.	Variations of West Declination.	After Moon farthest North.	Variations of West Declination.	After Moon farthest North.	Variations of West Declination.	Before and after Perigee.	Variations of West Declination.	Before and after Apogee.	Variations of West Declination.
Day.	′	Day.	′	Day.	′	Day.	′	Day.	′	Day.	′
15	0·46	0	0·65	0	0·63	14	0·47	7	0·38	7	0·77
16	0·69	1	0·27	1	0·32	15	0·31	6	0·12	6	0·62
17	0·60	2	0·42	2	0·45	16	0·49	5	0·41	5	0·42
18	0·94	3	0·49	3	0·38	17	0·15	4	0·25	4	0·61
19	0·79	4	0·68	4	0·16	18	0·39	3	0·37	3	0·39
20	0·48	5	0·38	5	0·05	19	0·74	2	0·22	2	1·12
21	0·66	6	0·42	6	0·08	20	0·17	1	0·49	1	0·68
22	0·64	7	0·21	7	0·08	21	0·20	P	0·66	A	0·81
23	0·64	8	0·04	8	0·24	22	0·60	1	0·34	1	0·78
24	0·50	9	0·53	9	0·00	23	0·51	2	0·67	2	0·71
25	0·53	10	0·53	10	0·06	24	0·08	3	0·55	3	0·67
26	0·44	11	0·12	11	0·16	25	0·55	4	0·58	4	0·33
27	0·61	12	0·28	12	0·06	26	0·58	5	0·56	5	0·40
28	0·32	13	0·00	13	0·20	27	0·54	6	0·54	6	0·31
29	0·45	14	0·12					7	0·79	7	0·00

The corrections for secular change have been made at the rate of 0′·0156 *per diem*, upon the supposition that it is regular from day to day, which is most probable when the means of several days are taken; the operation is similar to a transference of the projected ordinates from an oblique to a horizontal axis.

Note.—In the discussions with reference to the moon's age, declination, and distance from the earth, it should be remarked, that since 12 lunations occur in nearly the same time as 13 revolutions with respect to node or with respect to apogee, any variations in the element discussed, due to changes in the moon's declination or distance, will be eliminated in the mean of 12 lunations; and similarly in the means of 13 revolutions with respect to declination or with respect to distance, variations related to changes of phase alone will be eliminated; but this is not the case in the combinations for declination and distance, with respect to each other.

Variations of Westerly Declination with reference to the Moon's Age.—The general appearance of these variations, is that of a principal maximum about 3 days after the full moon, and a principal minimum between the 7th and 13th day; there are several secondary maxima and minima, as might be expected where the variations are so small, and the uneliminated sources of error so considerable. It is only from a mean of several years that a satisfactory result may be obtained.

Means of Groups.

14 days to 16 days, Full Moon,	0′·42	29 days to 1 day, New Moon,	0′·46
17 ...... 20 ...	0′·70	2 ...... 5 ...	0′·49
21 ...... 24 ...	0′·61	6 ...... 9 ...	0′·30
25 ...... 28 ...	0′·47	10 ...... 13 ...	0′·23

There is the appearance of a secondary minimum about new Moon, and of a secondary maximum immediately thereafter.

Variations of Westerly Declination with reference to the Moon's Declination.—The following are the means of groups for 1844 :—

27 days to 1 day, Moon farthest North,	0'·50	13 days to 15 days, Moon farthest South,	0'·33
2 ...... 5 ...	0'·26	16 ...... 19 ...	0'·44
6 ...... 8 ...	0'·13	20 ...... 22 ...	0'·32
9 ...... 12 ...	0'·07	23 ...... 26 ...	0'·43

The principal maximum occurs about the time when the moon is farthest north, the principal minimum after it has crossed the equator going south ; a secondary maximum is indicated after the moon is farthest south, and a secondary minimum after crossing the equator moving north.

Variations of Westerly Declination, with reference to the Moon's distance from the Earth :—

6 days after apogee to 6 days before perigee,	0'·20	6 days after perigee to 6 days before apogee,	0'·68
5 days to 2 days before perigee, ...	0'·31	5 days to 2 days before apogee, ...	0'·63
1 day before to 1 day after perigee,..........	0'·50	1 day before to 1 day after apogee,..........	0'·76
2 days to 5 days after perigee,.................	0'·59	2 days to 5 days after apogee,.................	0'·53

In 1844, the principal maximum occurred about apogee, and the principal minimum about midway between apogee and perigee.

Since a revolution of the perigee is performed in about 9 years, it will require observations for that period in order that the variations due to changing distance may be eliminated in the discussions for change of the moon's declination, and *vice versa*. If the variations due to one argument be much smaller than for the other, a shorter series of observations may suffice; this, however, will be determined chiefly by the extent of coincidence in the results of successive years. In the case of any argument for which the variations are small, the large variations due to irregular causes will, in general, render a single year's observations insufficient for a confident conclusion. Where, therefore, in the following discussions no extra reasons are brought forward in support of the results, they should be considered as results for the year 1844 only, which may be wholly or partially contradicted or confirmed by the results for other years. It has not been always thought necessary to point out the coincidences or oppositions of the results for 1843 and 1844, and that especially, on account of the incompleteness of the series for 1843.

Annual Variation of the Diurnal Ranges of Magnetic Declination.—The following are the monthly means of the diurnal ranges from Table III. :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
9'·00	10'·28	16'·21	15'·88	13'·48	12'·41	12'·36	14'·02	15'·22	15'·69	15'·91	11'·22

Whence the mean diurnal range is a maximum twice and a minimum twice, in the course of the year; it is a maximum in the months of March and April, and again in the months of September, October, and November, it has its least value in the month of January, and it is a secondary minimum in the months of June and July. The diurnal ranges of magnetic declination were greatest about the equinoxes, and least near the solstices.

When we compare these means with the ranges of the mean diurnal variation of each month (see Table VI.), we obtain the following quantities, which are the excesses of the monthly means of the diurnal ranges over the diurnal ranges of the monthly mean variations :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
3'·74	3'·92	6'·25	5'·68	4'·52	1'·36	2'·30	3'·71	5'·27	4'·75	6'·63	5'·26

From which it appears, that those irregular causes which render the mean of the diurnal ranges greater than the range of the mean diurnal variation, have their maximum effect in March and November, their minimum in June, and a secondary minimum in January, or nearly according to the law stated above for the annual variation of the diurnal ranges.

TABLE III.—Diurnal Range of Magnetic Declination for each Civil Day, as deduced from the Hourly Observations, with the Mean for each Week in 1844.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	′	′	′	′	′	′	′	′	′	′	′	′
1	10·88	21·03	6·05	11·61	15·67	14·32	12·78	19·12	[15·02]	44·72	14·19	[12·61]
2	12·10	7·46	20·24	16·22	11·26	[10·91]	13·51	19·85	11·57	19·65	16·45	12·07
3	5·00	11·42	[19·72]	14·70	18·72	9·67	10·83	17·69	12·09	14·32	[11·76]	4·53
4	4·20	[14·91]	26·09	12·26	8·43	8·41	13·81	[14·15]	11·42	11·83	17·07	22·76
5	18·71	14·39	22·80	15·28	[12·84]	11·93	10·94	9·04	10·16	12·36	6·75	10·04
6	23·80	11·98	24·07	29·21	13·39	12·49	12·48	9·12	7·56	[11·69]	6·14	4·71
7	[12·65]	23·21	27·29	[15·52]	9·52	12·99	[11·48]	10·09	11·21	11·06	8·22	5·92
8	10·81	14·26	27·22	11·73	15·72	11·65	15·97	12·11	[10·66]	12·41	8·58	[6·67]
9	8·89	8·39	23·15	9·87	15·20	[11·79]	6·89	16·27	14·86	8·75	6·88	3·54
10	9·49	14·91	[18·10]	14·75	8·46	11·33	8·78	13·67	9·54	7·04	[11·68]	8·20
11	7·16	[8·88]	10·18	15·82	10·62	10·78	9·99	[13·00]	10·64	6·73	17·02	7·60
12	10·29	7·45	11·27	9·68	[13·92]	11·53	8·63	11·57	11·50	8·50	18·60	3·55
13	5·33	5·20	9·48	10·49	10·05	13·56	12·19	14·28	12·92	[8·71]	10·76	4·14
14	[7·05]	3·10	6·91	[15·96]	17·48	12·48	[12·08]	10·10	17·53	11·21	12·17	10·84
15	5·54	8·52	8·76	12·79	21·72	10·56	14·18	9·64	[14·18]	9·42	6·03	[7·60]
16	6·45	6·84	9·22	8·61	10·83	[13·56]	13·58	19·72	10·82	9·39	63·80	13·52
17	7·54	13·18	[11·35]	38·39	9·01	17·96	13·89	14·41	17·38	10·89	[20·86]	4·91
18	13·61	[7·06]	17·06	16·36	9·40	14·16	18·65	[12·70]	14·95	14·28	20·12	8·65
19	3·73	3·36	16·85	8·81	[12·75]	12·62	12·54	11·28	19·72	7·71	14·33	19·49
20	6·50	4·89	9·32	10·50	8·41	10·46	12·28	9·88	28·71	[15·80]	8·72	32·83
21	[6·68]	5·56	8·79	[11·41]	20·72	19·77	[12·08]	11·26	12·23	30·65	5·65	20·23
22	5·15	8·09	12·04	10·54	18·14	9·46	7·93	17·57	[18·47]	17·51	41·83	[14·87]
23	7·87	7·01	9·53	11·26	27·58	[12·47]	10·48	15·42	11·96	13·77	47·36	6·66
24	3·21	4·57	[9·46]	10·97	8·68	9·26	10·60	14·44	11·59	13·22	[20·28]	4·84
25	16·66	[8·81]	9·91	42·78	17·02	12·53	19·49	[14·07]	26·59	43·95	9·32	5·18
26	7·63	7·70	8·44	22·67	[15·01]	13·37	9·39	12·46	27·28	33·49	4·27	6·09
27	5·08	7·27	8·07	18·63	12·53	9·78	17·01	12·05	20·99	[21·90]	13·23	9·31
28	[9·47]	18·21	14·93	[21·43]	12·78	10·55	[13·80]	12·47	17·58	13·33	18·76	13·32
29	5·88	19·06	34·10	15·38	11·48	18·53	11·94	16·58	[24·98]	15·99	12·96	[14·52]
30	8·33		39·53	13·48	9·48	[12·66]	10·41	22·75	19·64	11·42	4·56	32·35
31	13·26		[21·85]		11·66		14·59	15·69		9·95		16·37

TABLE IV.—Means of the Diurnal Ranges of Magnetic Declination with reference to the Moon's Age, Declination, and Distance, for 1844.

Moon's Age.	Mean Range.	Moon's Age.	Mean Range.	After Moon farthest North.	Mean Range.	After Moon farthest North.	Mean Range.	Before and after Perigee.	Mean Range.	Before and after Apogee.	Mean Range.
Day.	′	Day.	′	Day.	′	Day.	′	Day,	′	Day.	′
15	15·59	0	12·21	0	10·43	14	11·61	7	15·84	7	13·92
16	16·28	1	11·69	1	11·35	15	12·51	6	12·57	6	12·78
17	15·82	2	11·89	2	15·22	16	9·89	5	16·46	5	13·48
18	15·96	3	10·32	3	13·36	17	15·20	4	12·87	4	15·70
19	18·76	4	11·03	4	17·85	18	12·25	3	12·08	3	16·50
20	13·06	5	11·28	5	15·47	19	12·79	2	12·68	2	19·33
21	12·46	6	16·52	6	15·14	20	14·24	1	12·72	1	13·27
22	12·05	7	12·17	7	12·69	21	13·32	P	11·36	A	12·26
23	9·89	8	14·98	8	14·51	22	11·92	1	15·80	1	10·17
24	11·97	9	12·67	9	13·06	23	19·93	2	13·29	2	10·00
25	9·86	10	16·23	10	11·26	24	18·45	3	12·40	3	11·45
26	9·16	11	16·40	11	11·69	25	12·99	4	10·80	4	12·61
27	10·73	12	17·76	12	13·54	26	13·07	5	14·71	4	14·06
28	10·77	13	19·38	13	12·04	27	11·87	6	12·87	6	16·44
29	10·69	14	16·78					7	13·81	7	16·18

This table has been formed from Table III. in the manner described for Table II.

Variations of the Diurnal Ranges of Magnetic Declination, with reference to the Moon's Age.—The differences of the diurnal ranges of the magnetic declination at the different ages of the moon are very remarkable; these, and the law of the variations, are shewn more regularly in the following means of groups:—

14 days to 16 days, Full Moon,	16′·22	29 days to 1 day, New Moon,	11′·53
17 ...... 20 ..	15′·90	2 ...... 5 ...	11′·13
21 ...... 24 ...	11′·59	6 ...... 9 ...	14′·08
25 ...... 28 ...	10′·13	10 ...... 13 ...	17′·44

From these means, *the diurnal range of magnetic declination is greatest about full moon, and least about new moon*, the actual epochs being rather before these events. This law is exceedingly well marked; in fact the variation of these means is upwards of seven minutes, and is greater than the variation of the monthly means. This result is not a little curious, when it is remembered that each of the 8 values above is a mean of the ranges for from 36 to 48 days; these, being distributed in groups of 3 or 4 days at equal intervals over the year, the range due to the sun's position alone is completely eliminated. In 1844, then, the diurnal range of magnetic declination varied more in the means for 8 periods during the synodical revolution of the moon, than in the means for 12 periods during the earth's revolution round the sun.

It should be remarked, that the diurnal range does not vary much during the first and fourth quarters, nor during the second and third quarters, the average diurnal range of the 10 days from the moon's age, 10 to 19 days, being 16′·89; and for the 10 days from the moon's age, 25 days to 4 days, being 10′·83; the mean for the remaining 10 days (20 to 24, and 5 to 9) being 12′·70.

An examination of the simple diurnal ranges, shews that the law announced is distinctly marked in four or five lunations, as may be readily seen in the projected values.* It is well marked in the lunation occurring between January 19 and February 17; but the variations of the range are greater in the two lunations immediately succeeding that and in the two lunations occurring in September and October. If the points which indicate the weekly means in the projections be followed, it will be evident that the law is still existing, though with more irregularity, in the months of August, November, and December. The value of the range oscillates considerably from day to day, but in the lunations particularly referred to, the larger values, as well as the smaller values, and weekly means, equally exhibit the same law; in some cases, intermittent disturbances produce irregularity. It is evident, from these projected values, that the diurnal range of the magnetic declination in 1844 *was greatest when the sun and moon were in opposition near the equator*, or, more accurately, immediately before the vernal and after the autumnal equinox.

Variations of the Diurnal Range of Magnetic Declination, with reference to the Moon's Declination.—From the second portion of Table IV., it appears that the diurnal range is a minimum when the Moon has its greatest south and greatest north declinations, and a maximum about 2 days before it passes the equator moving south, and 2 days before it passes the equator moving north. The following are means of groups:—

27 days to 1 day, Moon farthest north,	11′·22	13 days to 15 days, Moon farthest south,	12′·05
2 ...... 5 ...	15′·48	16 ...... 19 ...	12′·53
6 ...... 8 ...	14′·11	20 ...... 22 ...	13′·16
9 ...... 12 ...	12′·39	23 ...... 26 ...	16′·08

The variation of these means is still considerable, being nearly 5′. The law of the variation of the diurnal ranges for 1844, is nearly the same with reference to the moon's position in declination as to the sun's position in declination, and may be generally stated thus:—*The diurnal range of magnetic declination is less when the sun or moon has its greatest north or south declination, than at the intermediate periods.*

It will be remarked, that this result may be chiefly or altogether dependent on the other law given above, with respect to the relative positions of the sun and moon.

Variations of the Diurnal Ranges of Magnetic Declination with reference to the Moon's Distance from the Earth.—Apogee happens nearly at the time of greatest north declination in 1844; consequently, from the previous discussion, there are minima about apogee and perigee, and maxima at the intermediate periods; as is also evident in the following means of groups:—

6 days after apogee to 6 days before perigee,	15′·26	6 days after perigee to 6 days before apogee,	13′·34
5 days to 2 days before perigee, .	13′·52	5 days to 2 days before apogee, . .	16′·25
1 day before to 1 day after perigee, .	13′·29	1 day before to 1 day after apogee, .	11′·90
2 days to 5 days after perigee, . .	12′·80	2 days to 5 days after apogee, .	12′·03

* See the Plates at the end of the volume.

TABLE V.—Hourly Means of Westerly Declination for each Month in 1844.

Mean Time. Gött.	Mean Time. Mak.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	h.	′	′	′	′	′	′	′	′	′	′	′	′	′
13	12	19·45	17·39	15·22	17·01	14·27	15·77	14·98	15·14	15·33	13·23	11·55	12·84	15·18
14	13	19·58	18·27	16·25	15·88	15·20	15·37	14·87	15·73	15·46	12·94	12·57	12·76	15·41
15	14	19·63	18·17	16·96	16·30	15·86	14·79	14·55	15·04	15·35	13·92	14·38	13·64	15·72
16	15	20·34	17·93	15·85	16·03	15·83	14·25	14·50	14·85	14·79	15·05	14·21	14·42	15·67
17	16	19·96	17·48	16·92	16·10	15·62	13·25	13·73	14·19	14·48	15·36	13·84	13·98	15·41
18	17	19·86	17·74	16·56	16·06	14·94	12·16	12·38	14·40	15·42	15·57	14·17	13·91	15·26
19	18	20·49	17·93	17·24	16·06	13·98	11·71	12·65	14·32	15·44	15·74	13·99	14·25	15·32
20	19	20·52	18·43	16·74	15·71	13·75	12·23	12·76	13·91	15·41	14·86	14·89	14·07	15·27
21	20	20·42	18·73	16·76	15·79	14·53	13·10	13·85	15·52	15·69	14·46	15·34	14·18	15·70
22	21	21·13	19·29	17·73	17·22	15·82	15·02	15·45	17·66	17·53	15·60	15·71	14·50	16·89
23	22	22·08	20·87	19·70	19·36	18·35	17·04	17·62	19·70	20·40	17·91	17·00	15·19	18·77
0	23	22·84	22·10	21·84	21·88	20·83	20·40	20·22	22·19	23·13	19·85	18·58	16·34	20·85
1	0	23·69	22·44	23·05	25·07	22·23	22·09	21·73	24·22	23·77	21·48	19·79	17·64	22·27
2	1	23·19	22·33	24·15	24·97	22·71	22·76	22·44	24·06	23·34	21·21	19·20	17·31	22·31
3	2	22·47	21·98	22·36	24·20	22·34	22·25	21·58	22·91	22·08	19·80	18·21	16·52	21·39
4	3	21·69	20·68	20·87	22·67	21·37	21·08	20·58	20·24	19·54	17·99	16·69	14·29	19·81
5	4	21·42	19·44	19·31	20·82	19·97	19·20	18·92	19·03	17·50	16·40	15·68	14·72	18·53
6	5	20·86	19·50	16·45	18·61	18·85	17·76	18·10	17·74	16·51	15·34	15·11	14·60	17·45
7	6	20·24	19·23	15·54	17·46	18·31	16·98	17·42	16·85	14·98	14·93	10·93	14·50	16·45
8	7	19·94	18·06	16·68	16·82	17·63	16·78	15·86	16·61	14·35	14·12	11·66	13·63	16·01
9	8	18·69	16·76	15·67	17·31	16·02	16·55	16·02	15·92	13·82	10·54	10·51	11·77	14·96
10	9	18·43	16·46	16·29	16·57	16·50	16·28	15·85	15·20	15·43	11·81	10·90	12·32	15·17
11	10	18·53	16·08	15·73	15·96	15·66	15·76	15·21	15·43	15·13	11·81	11·56	11·98	14·90
12	11	18·89	17·14	14·21	14·87	14·57	15·37	15·00	15·76	15·53	11·74	10·91	11·68	14·64

Table V. is intended chiefly as a key for comparing the hourly observations.

The true mean time at Makerstoun is 10^m in advance of the numbers given in the second column of Table V.

Diurnal Variation of Westerly Declination.—The mean result for the year 1844, may be stated as follows:—The north end of the declination magnet was farthest west at 40^m past Noon, Makerstoun mean time; it then moved towards the east till about $10^h\ 0^m$ P.M., having moved through about 8′; from 10^h P.M. till $2^h\ 40^m$ A.M. it moved 1′ towards the west, returning afterwards till $6^h\ 10^m$ A.M., 0′·3 towards the east again; from 7^h A.M. till $0^h\ 40^m$ P.M. it moved through 7′ to its farthest westerly position. The mean diurnal variation for the year, therefore, consisted of two maxima and two minima of westerly declination, the minima differing only 0′·7 from each other. In these, as in the following cases, the approximate epochs of maxima and minima are obtained from the projected values by graphic interpolation.

The principal maximum occurred at the following times in the different months of 1844:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
P.M.	$0^h\ 10^m$	$0^h\ 10^m$	$1^h\ 10^m$	$0^h\ 30^m$	$1^h\ 10^m$	$1^h\ 10^m$	$1^h\ 10^m$	$0^h\ 30^m$	$0^h\ 10^m$	$0^h\ 40^m$	$0^h\ 10^m$	$0^h\ 20^m$

The principal maximum, therefore, occurred nearer noon in Winter than in Summer, and nearer noon in August and September than in March and April (this is evident whether mean or apparent time be employed).

The principal minimum occurred between 5^h and 7^h A.M. in the months of May, June, July, and August, and before midnight in the other months of the year. The following are the approximate times for each month.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
10^h P.M.	10^h	10^h?	11^h? P.M.	$6^h\ 30^m$ A.M.	$6^h\ 10^m$	$5^h\ 10^m$	6^h? A.M.	8^h P.M.	8^h?	9^h?	10^h? P.M.

On account of considerable irregularities occurring in some months near the epoch of principal minimum, the times, in consequence, are frequently very rough approximations.

TABLE VI.—Diurnal Variations of Westerly Declination for each Month in 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	′	′	′	′	′	′	′	′	′	′	′	′	′
12	1·02	1·31	1·01	2·14	0·52	4·06	2·60	1·23	1·51	2·69	1·04	1·16	0·54
13	1·15	2·19	2·04	1·01	1·45	3·66	2·49	1·82	1·64	2·40	2·06	1·08	0·77
14	1·20	2·09	2·75	1·43	2·11	3·08	2·17	1·13	1·53	3·38	3·87	1·96	1·08
15	1·91	1·85	1·64	1·16	2·08	2·54	2·12	0·94	0·97	4·51	3·70	2·74	1·03
16	1·53	1·40	2·71	1·23	1·87	1·54	1·35	0·28	0·66	4·82	3·33	2·30	0·77
17	1·43	1·66	2·35	1·19	1·19	0·45	0·00	0·49	1·60	5·03	3·66	2·23	0·62
18	2·06	1·85	3·03	1·19	0·23	0·00	0·27	0·41	1·62	5·20	3·48	2·57	0·68
19	2·09	2·35	2·53	0·84	0·00	0·52	0·38	0·00	1·59	4·32	4·38	2·39	0·63
20	1·99	2·65	2·55	0·92	0·78	1·39	1·47	1·61	1·87	3·92	4·83	2·50	1·06
21	2·70	3·21	3·52	2·35	2·07	3·31	3·07	3·75	3·71	5·06	5·20	2·82	2·25
22	3·65	4·79	5·49	4·49	4·60	5·33	5·24	5·79	6·58	7·37	6·49	3·51	4·13
23	4·41	6·02	7·63	7·01	7·08	8·69	7·84	8·28	9·31	9·31	8·07	4·66	6·21
0	5·26	6·36	8·84	10·20	8·48	10·38	9·35	10·31	9·95	10·94	9·28	5·96	7·63
1	4·76	6·25	9·94	10·10	8·96	11·05	10·06	10·15	9·52	10·67	8·69	5·63	7·67
2	4·04	5·90	8·15	9·33	8·59	10·54	9·20	9·00	8·26	9·26	7·70	4·84	6·75
3	3·26	4·60	6·66	7·80	7·62	9·37	8·20	6·33	5·72	7·45	6·18	2·61	5·17
4	2·99	3·36	5·10	5·95	6·22	7·49	6·54	5·12	3·68	5·86	5·17	3·04	3·89
5	2·43	3·42	2·24	3·74	5·10	6·05	5·72	3·83	2·69	4·80	4·60	2·92	2·81
6	1·81	3·15	1·33	2·59	4·56	5·27	5·04	2·94	1·16	4·39	0·42	2·82	1·81
7	1·51	1·98	2·47	1·95	3·88	5·07	3·48	2·70	0·53	3·58	1·15	1·95	1·37
8	0·26	0·68	1·46	2·44	2·27	4·84	3·64	2·01	0·00	0·00	0·00	0·09	0·32
9	0·00	0·38	2·08	1·70	2·75	4·57	3·47	1·29	1·61	1·27	0·39	0·64	0·53
10	0·10	0·00	1·52	1·09	1·91	4·05	2·83	1·52	1·31	1·27	1·05	0·30	0·26
11	0·46	1·06	0·00	0·00	0·82	3·66	2·62	1·85	1·71	1·20	0·40	0·00	0·00

The approximate times of the secondary maximum (+) and maximum (−) are as follow; the hours in parentheses are times of inflexions, which do not attain the character of maxima or minima.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
+	(3^h A.M.)?	2^h	3^h?	2^h?	3^h A.M.	(12^h P.M.)?	(1^h A.M.)?	12^h? P.M.	12^h? P.M.	6^h A.M.	2^h	(3^h A.M.)?
−	(8^h A.M.)?	$4\frac{1}{2}^h$	$7\frac{1}{2}^h$?	$7\frac{1}{2}^h$ A.M.	12^h P.M.	(6^h P.M.)?	(7^h A.M.)?	9^h? P.M.	4^h? P.M.	8^h A.M.	5^h	(7^h A.M.)?

The irregularities in the means for a single month, are too considerable to render approximations to the epochs of the secondary points of much value; on the whole, however, it may be stated, that in the 8 months which have the principal minimum before midnight, a secondary minimum occurred from 5^h to 8^h A.M., or within a few hours of the epoch of the principal minimum of the remaining 4 months; and in these the secondary minimum perhaps occurred between 6^h and 12^h P.M. The secondary maximum (or inflexion) occurred between midnight and 3 A.M. in each month excepting October.

Strictly speaking, only one maximum and one minimum are marked distinctly in the solstitial months; but although the secondary points are not absolutely exhibited, there are points of inflexion, in the projected means, near the corresponding times; there are periods when the velocity of change is zero, or has a minimum value, though it does not change sign. These seem equally results of the same physical cause, and are probably only less distinct from the superposition of other motions.

It is evident that a single year's observations, combined in the usual way, are insufficient for the determination of the true law of diurnal variation in each month of the year. This insufficiency is chiefly due to the effect of intermittent disturbances, which destroy the regularity of the continuous diurnal disturbance. From results which follow, with reference to intermittent disturbances, it will be seen not only that these are in excess at particular hours, but that they affect a particular sign, the mean disturbance deduced from any number of observations at a given hour being a positive or negative quantity. It is certain, therefore, that no accumulation of observations, combined in the usual way, can exhibit the law of the simple diurnal variation, and it becomes a matter of importance to endeavour to deduce this law at once from the series we possess.

A considerable acquaintance with the motions of the magnets, and a careful examination of the observations, have equally led me to separate the diurnal motions into three classes—1st, On particular

days in each month the magnet proceeds slowly and regularly from one known singular point to another, the deviations from this regularity being altogether of the second order with respect to the principal motion. 2d, On other days, the regularity of the first class is suddenly interrupted, for a short period, by excursions of considerable magnitude, after which the previous regularity is continued. 3d, The last class of motions is wholly irregular for large portions of the day, and consists of alternate deviations to the east and west of the mean position within short periods of time. The fact that there are certain days in each month during which the motion of the magnet seems to obey a simple and continuous law, while the disturbances which destroy the regularity on other days are so obviously discontinuous or intermittent, occurring very seldom in some months, points out a method which, if not wholly free from objection, has the advantage of simplicity, and offers, it appears to me, a very near approximation to the truth. This method consists simply in the selection of the days which comprehend the first class of motions.

Having carefully examined the nature of the diurnal variation for each day, I at first selected in each month the 10 days on which the effect of the intermittent disturbances appeared to me least. In the same manner, the 5 days with the smallest apparent irregularity in each month were selected. As the mode in which these selections were made was to some extent arbitrary, I desired Mr Welsh to make similar selections independently. Upon comparison, it was found that there were 17 days in 120, and 13 days in 60, for which we differed, and that the difference in almost every case occurred on days of which the preferability was very doubtful. It will be very obvious, however, from the coincidences of the results for the 5 days and 10 days selected, that a difference in choice of a few nearly equally good days, is altogether immaterial. The following Table contains a list of the days selected, which differ only in three instances in each class from the selections at first made by myself, and employed in forming the Tables; the days adopted from Mr Welsh's selection in preference to my own, were, March 1, for March 27; November 5, for November 8; December 25, for December 23, in the 10-day class: and April 12, for April 10; August 28, for August 21; December 7, for December 3, in the 5-day class.

TABLE VII.—List of the Ten Days and Five Days in each Month of 1844, which have been selected as being the least disturbed.

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	13	1	9	* 4	* 4	* 2	6	2	4	5	3
* 3	* 14	12	10	7	* 5	* 3	* 7	3	9	* 6	* 6
* 4	15	13	* 12	11	6	5	8	* 5	* 10	* 7	* 7
* 13	* 19	* 14	* 13	13	* 7	* 11	* 14	* 6	* 11	* 9	* 9
15	* 20	* 15	16	16	12	15	* 15	7	* 12	13	11
16	21	* 16	19	* 17	14	19	19	* 11	14	* 15	* 12
17	23	21	* 20	* 20	* 15	20	* 20	* 12	15	20	* 13
* 19	* 24	* 23	22	29	* 24	* 22	21	13	* 16	21	17
20	26	25	* 23	* 30	25	23	27	* 16	18	26	24
* 24	* 27	* 26	* 24	* 31	28	* 24	* 28	21	* 19	* 30	25

The * indicates that the day has been selected as one of the 5 days of least disturbance.

The following Tables contain the hourly means for each month, as deduced from the 10 days and from the 5 days of most regularity in each month.

TABLE VIII.—Hourly Means of Magnetic Declination for the Ten Days least disturbed in each Month of 1844 corrected, so that the Mean of each Ten Days equals the true Monthly Mean.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	′	′	′	′	′	′	′	′	′	′	′	′	′
12	19·99	18·08	16·52	16·73	15·90	15·69	15·19	16·04	15·74	13·08	13·45	13·66	15·85
13	19·66	18·20	16·34	16·88	15·67	15·52	15·11	16·37	16·09	13·23	13·98	13·82	15·91
14	19·52	18·06	16·21	16·79	16·05	15·15	14·96	16·46	15·43	14·10	14·28	13·87	15·91
15	19·73	17·85	16·23	16·35	16·49	14·71	14·79	15·96	15·38	13·84	14·38	14·35	15·84
16	19·71	17·88	16·24	16·41	15·43	13·75	14·16	14·97	14·89	14·11	14·47	13·98	15·51
17	20·06	17·70	16·30	16·11	14·23	12·32	12·56	14·20	15·19	14·24	13·81	14·04	15·07
18	20·00	18·02	16·16	15·53	13·50	11·83	11·61	13·45	14·32	13·89	13·78	14·06	14·69
19	19·93	18·23	15·41	14·48	13·95	12·08	11·48	13·43	14·23	13·25	13·82	14·00	14·53
20	20·07	18·72	14·86	14·50	13·99	12·85	12·76	14·67	14·96	12·82	13·88	13·76	14·83
21	20·66	19·22	15·86	15·56	15·12	14·42	14·51	16·85	17·41	13·76	14·21	13·37	15·92
22	21·54	20·23	18·08	18·39	17·90	16·34	17·18	19·47	19·81	16·31	15·85	14·12	17·94
23	22·83	21·43	20·97	21·33	20·32	19·94	20·44	21·82	22·19	18·89	17·16	15·43	20·24
0	23·52	21·72	22·35	23·88	22·15	21·82	21·58	23·35	23·61	20·52	18·20	16·60	21·61
1	23·03	21·69	23·29	24·23	22·53	22·45	22·08	23·18	23·10	21·11	17·77	16·53	21·76
2	21·69	21·02	22·34	23·55	21·82	22·20	21·64	22·02	21·39	20·15	16·67	16·20	20·90
3	21·35	19·83	20·85	21·87	20·60	20·72	20·40	19·64	18·98	18·66	15·39	15·35	19·48
4	21·13	18·90	18·83	20·43	19·35	18·89	19·25	18·14	17·32	16·84	14·89	14·55	18·22
5	20·77	19·17	17·56	19·12	18·66	17·64	18·14	17·21	16·17	16·35	14·01	14·36	17·44
6	20·64	18·86	17·48	18·44	18·24	16·89	17·41	16·83	16·64	15·87	14·04	13·83	17·10
7	20·34	18·25	17·94	18·08	17·51	16·85	16·94	16·88	16·47	15·03	13·01	13·56	16·74
8	19·84	18·39	17·55	17·76	16·57	17·00	16·43	16·35	14·56	14·50	12·77	13·32	16·26
9	19·51	17·71	17·19	17·62	16·83	16·53	16·25	16·87	15·73	13·79	12·08	13·04	16·10
10	19·44	17·41	17·14	17·17	16·16	16·39	15·78	16·66	15·50	13·70	12·62	12·44	15·87
11	19·49	17·75	16·46	17·00	16·06	16·02	15·68	15·93	15·27	13·77	12·84	12·80	15·76

TABLE IX.—Hourly Means of Magnetic Declination for the Five Days least disturbed in each Month of 1844, corrected so that the Mean of each Five Days equals the Monthly Mean.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	′	′	′	′	′	′	′	′	′	′	′	′	′
12	20·10	18·09	17·02	17·10	16·23	16·02	15·73	16·55	16·01	13·99	13·17	13·18	16·10
13	20·20	18·18	16·62	17·21	16·03	15·71	15·49	16·37	16·25	13·97	13·86	13·92	16·15
14	20·16	18·10	16·22	17·14	15·88	15·52	15·24	16·24	15·45	14·05	14·50	13·73	16·02
15	20·05	17·63	16·32	16·81	15·66	14·81	14·73	15·39	15·46	14·19	13·75	14·23	15·75
16	20·15	17·98	16·56	15·87	14·90	13·72	14·32	15·06	15·10	14·28	13·94	13·95	15·49
17	20·34	17·57	16·38	15·50	13·96	12·63	12·42	14·23	15·09	14·19	13·70	13·63	14·97
18	20·30	18·01	16·07	14·61	13·11	11·99	11·76	13·53	14·77	14·19	13·33	13·91	14·63
19	20·19	18·32	15·48	13·65	14·21	12·21	11·64	13·50	14·40	13·54	13·22	13·87	14·52
20	20·12	18·79	15·07	14·28	13·83	13·02	12·47	14·53	14·88	12·95	13·33	13·74	14·75
21	20·64	19·19	15·71	15·62	14·89	14·15	13·99	16·36	17·18	13·71	13·95	13·31	15·72
22	21·56	20·27	18·06	18·91	16·90	15·61	16·47	18·92	19·73	16·39	15·81	14·15	17·73
23	22·41	21·26	21·43	21·95	19·65	18·99	19·83	21·24	21·90	18·29	17·13	15·67	19·98
0	22·90	21·38	22·37	24·77	21·49	21·28	20·73	22·80	23·18	19·95	18·09	16·42	21·28
1	22·49	21·20	23·25	24·77	22·08	22·09	21·51	22·89	22·73	20·27	17·93	16·59	21·48
2	21·53	20·56	21·84	23·79	21·65	21·88	21·13	22·11	20·90	19·40	16·63	16·16	20·63
3	21·07	19·67	20·13	21·79	21·14	20·75	20·32	20·28	18·66	17·81	15·42	14·99	19·34
4	21·02	19·23	18·56	20·29	19·90	18·74	19·28	18·61	17·03	16·49	14·99	14·57	18·23
5	20·60	19·15	17·63	18·85	19·23	17·83	18·36	17·52	15·80	15·94	14·43	14·44	17·48
6	20·30	18·76	17·56	18·32	18·73	17·24	17·76	16·87	16·68	15·73	14·16	14·17	17·19
7	20·06	18·28	17·52	18·03	18·12	17·32	17·43	16·99	16·13	15·28	13·33	13·78	16·86
8	19·79	18·39	17·36	17·50	17·29	17·23	17·21	16·69	15·12	14·49	13·60	13·52	16·52
9	19·23	18·30	17·27	17·59	17·37	16·39	16·48	17·24	16·22	14·48	12·74	13·06	16·36
10	19·25	17·82	17·00	17·30	16·52	16·38	15·97	16·71	15·90	14·08	13·06	12·86	16·07
11	20·02	18·13	16·78	17·11	16·44	16·28	15·89	15·95	15·79	14·05	13·15	13·01	16·05

The means of the observations made on the 60 days selected, representing the mean diurnal variation for the year, give the following result:—

The north end of the declination magnet is farthest west at $0^h\ 45^m$ P.M.; it then moves easterly, the velocity of motion being nearly constant till 5^h P.M., after which it moves more slowly in the same direction till $11^h\ 10^m$ P.M., having moved altogether through $5'{\cdot}5$; from $11^h\ 10^m$ P.M. till 1^h A.M., it moves westerly through $0'{\cdot}10$; after 1^h A.M. it again moves toward the east, attaining its farthest easterly position at $7^h\ 0^m$ A.M., having moved $1'{\cdot}6$ between 1^h and 7^h A.M. After 7^h, it returns $7'{\cdot}0$ to its farthest westerly position at $0^h\ 45^m$ P.M. It will be observed, that this result differs from that obtained by means of the whole series, in placing the principal minimum in the morning, and in nearly obliterating the secondary maximum and minimum. The mean for the 120 days gives nearly the same result as that obtained from the 60 days' observations; the former places the secondary maximum about $1^h\ 40^m$ A.M., and gives $0'{\cdot}15$ as the amount of motion from the position of secondary minimum to that of secondary maximum. Although the secondary maximum were wholly wanting, there would still be distinct evidence of the action of a secondary cause in the inflections of the curve. Other differences between the results for the 60 days, and for the whole series, will be indicated immediately.

The following Table contains the epochs of maxima and minima, deduced from the monthly means for the 10 days and 5 days respectively.

TABLE X.—Epochs of Maxima and Minima of Magnetic Declination, obtained from the Ten-Day and Five-Day series of observations.

Month.	10 Days.				5 Days.			
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
January	0 10 P.M.	−10 0 P.M.	?	8 0? A.M.	0 10 P.M.	− 9 40 P.M.	2 0? A.M.	8 0? A.M.
February	0 30 ...	−10 0 ...	1 0 A.M.	5 0? ...	0 0 ...	−10 10 ...	1 0 ...	−5 0 ...
March	1 10 ...	(6 0)? ...	......	−8 10 ...	1 0 ...	......	......	−8 10 ...
April	1 0 ...	......	......	−7 30 ...	0 40 ...	11 0 ...	1 0 ...	−7 10 ...
May	1 10 ...	(6 0) ...	3 0 ...	−6 20 ...	1 0 ...	......	......	−6 10 ...
June	1 20 ...	(6 0) ...	......	−6 10 ...	1 20 ...	......	......	−6 20 ...
July	1 10 ...	......	......	−6 40 ...	1 20 ...	......	......	−6 50 ...
August	0 30 ...	9 0? ...	2 0 ...	−6 40 ...	0 40 ...	......	......	−6 40 ...
September	0 20 ...	8 0? ...	1 0 ...	−6 40 ...	0 30 ...	8 0? ...	1 0 ...	−7 20 ...
October	1 0 ...	12 0 ...	4 0 ...	−8 0 ...	0 50 ...	12 0 ...	4 0 ...	−8 10 ...
November	0 20 ...	− 9 10 ...	4 0 ...	7 0 ...	0 30 ...	− 9 10 ...	2 0 ...	7 10 ...
December	0 30 ...	−10 10 ...	4 0 ...	9 10 ...	1 0 ...	−10 10 ...	3 0 ...	9 10 ...

The epochs for both series are nearly the same; considering the 5-day series as most free from the effect of intermittent disturbances, we find the same law to hold with respect to the varying epoch of the principal maximum as has already been found from the whole series. The principal minimum occurs between 9^h and 10^h P.M. in the four months of November, December, January, February, and it is only in these months that two maxima and two minima are distinctly marked; in November and February the minima are nearly of equal value. The minimum in the remaining 8 months occurs between 6^h and 9^h A.M.

Ranges of Mean Diurnal Variation.—The following are the ranges of the monthly mean diurnal variation, as deduced from all the hourly observations, from the hourly observations in the 10 days and in the 5 days least affected by disturbances.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
All, .	5'·26	6'·36	9'·94	10'·20	8'·96	11'·05	10'·06	10'·31	9'·95	10'·94	9'·28	5'·96
10 days,	4'·08	4'·31	8'·43	9'·75	9'·03	10'·62	10'·60	9'·92	9'·38	8'·29	6'·12	4'·16
5 days,	3'·67	3'·81	8'·18	11'·12	8'·97	10'·10	9'·87	9'·39	8'·78	7'·32	5'·35	3'·71

In each case, the ranges for the months from March to October, both inclusive, vary but little, and that irregularly. The ranges for the undisturbed variations change considerably between February and March, and October and December; and the ranges for the four months, November, December, January, and February, do not differ greatly. The range for November from the whole observations, is considerably more than its average value at Makerstoun.

TABLE XI.—Variations of Magnetic Declination with reference to the Moon's Hour-Angle for each Lunation, for the Six Summer and Six Winter Lunations, and for the whole Twelve Lunations of 1844.

Moon's Hour-Angle.	Lunations.														
	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.	12th.	Summer.	Winter.	Year.
h.	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
0	1·63	1·55	0·65	1·07	1·04	0·81	1·27	1·13	0·00	1·69	0·39	1·02	0·50	0·58	0·32
1	1·26	1·08	2·41	0·29	1·99	1·06	1·28	1·40	0·42	2·59	0·42	1·02	0·82	0·76	0·57
2	1·67	0·63	1·59	0·74	0·98	1·20	0·97	0·65	1·01	3·22	0·00	0·00	0·54	0·62	0·36
3	1·82	1·18	2·80	2·05	1·93	1·23	0·55	1·68	1·89	3·13	2·05	0·27	1·24	1 26	1·03
4	1·54	1·33	1·68	1·66	1·54	0·98	0·57	0·96	1·30	3·33	1·64	1·37	1·17	0·87	0·80
5	1·17	0·91	1·62	0·50	1·15	0·72	0·27	1·91	0·66	3·74	3·00	1·61	1·36	0·56	0·74
6	1·11	0·68	1·50	0·94	1·16	0·32	0·06	2·00	0·52	3·41	2·13	2·18	1·19	0·53	0·64
7	1·02	1·43	0·68	0·97	1·21	0·38	0·25	1·50	1·67	3·95	2·97	1·78	1·33	0·70	0·79
8	0·86	0·51	0·97	0·87	0·00	0·57	0·59	1·25	1·32	3·95	2·99	2·27	1·28	0·47	0·65
9	1·20	1·47	0·53	0·43	0·45	0·00	0·80	1·61	1·35	4·49	2·38	2·25	1·41	0·47	0·72
10	0·67	1·15	1·27	0·20	1·04	0·26	1·07	1·62	1·73	4·75	2·90	1·75	1·45	0·68	0·84
11	0·49	0·75	1·69	0·77	0·88	0·45	1·32	1·77	2·26	4·82	2·92	1·97	1·47	0·94	0·99
12	0·72	1·22	1·61	0·72	0·97	1·22	1·64	1·73	2·55	4·13	2·82	1·98	1·44	1·17	1·08
13	1·27	0·94	1·68	0·68	0·95	0·46	1·20	1·87	2·31	3·04	3·24	2·01	1·38	0·94	0·94
14	1·44	1·50	1·49	0·70	1·12	0·23	0·63	1·86	2·11	1·89	2·87	2·40	1·27	0·81	0·82
15	1·36	0·91	0·22	0·10	1·17	0·16	0·54	1·33	1·73	3·33	3·21	1·58	1·12	0·54	0·61
16	1·00	1·51	0·35	0·00	0·33	0·30	0·36	0·21	0·64	2·08	3·36	1·46	0·97	0·00	0·27
17	1·43	1·24	0·62	0·01	0·40	0·92	0·55	0·96	0·99	2·02	2·79	1·23	0·90	0·33	0·40
18	1·77	1·27	1·04	0·67	0·90	0·66	0·40	0·00	1·11	1·93	1·67	0·69	0·74	0·32	0·31
19	0·75	0·00	0·00	1·37	0·69	0·60	0·00	0·58	0·65	1·05	2·51	0·20	0·10	0·35	0·00
20	0·27	1·00	1·72	1·61	0·72	0·81	1·04	1·33	0·45	2·07	1·02	1·13	0·55	0·69	0·40
21	0·80	0·51	0·11	2·04	0·92	0·73	1·00	1·51	0·26	0·43	1·58	0·55	0·00	0·77	0·17
22	0·92	2·12	0·11	1·19	0·57	0·57	0·67	1·17	0·30	1·93	1·63	1·27	0·68	0·44	0·34
23	0·00	1·04	1·76	0·91	0·57	0·77	1·69	1·15	1·65	1·46	1·27	0·48	0·35	0·82	0·37
24	0·04	0·48	1·05	0·53	1·81	1·06	1·25	1·19	0·25	0·00	2·15	0·26	0·00	0·70	0·13

Table XI. has been formed from the hourly observations between January 6 and December 24, 1844, including 12 complete synodical revolutions of the moon. In each lunation, the hourly observations nearest the moon's transit of the meridian, were summed as 0, the next following as 1, and so on up to 23 or 24; when only 24 observations occurred between two successive transits, the observation nearest the second of the two transits was summed both as 24 and 0. The numbers in the first column are, therefore, $\frac{24}{26}$ths of the moon's hour angle from the meridian.

Diurnal Variation with reference to the Moon's Hour-Angle.—The separate lunations present considerable irregularities, as might be expected where the range of the variations is so small; an inspection, however, of the separate results, renders it extremely probable that the law of variation is somewhat different for the lunations in which the moon is in opposition north of the equator, and for those in which it is in opposition south of the equator. The variations have accordingly been determined for these two groups, namely, for the 1st, 2d, 3d, 10th, 11th, and 12th lunations, and for the remaining 6 summer lunations. In order to destroy the minor irregularities, the following means of variations are deduced, the mean for the moon on the meridian (0^h) being the mean of the three values for 24, 0, and 1, in the previous Table, and each of the other values being the mean of two:—

Groups,	$0^h\ 0^m$	$2^h\ 25^m$	$4^h\ 20^m$	$6^h\ 15^m$	$8^h\ 10^m$	$10^h\ 5^m$	$12^h\ 0^m$	$13^h\ 55^m$	$15^h\ 50^m$	$17^h\ 45^m$	$19^h\ 40^m$	$21^h\ 35^m$
Winter,	0′·24	0′·62	0′·99	0′·99	1′·07	1′·19	1′·18	0′·92	0′·66	0′·15	0′·00	0′·24
Summer,	0′·52	0′·78	0′·55	0′·45	0′·31	0′·65	0′·89	0′·51	0′·00	0′·17	0′·57	0′·45
1844,	0′·22	0′·54	0′·62	0′·56	0′·53	0′·76	0′·88	0′·56	0′·18	0′·00	0′·13	0′·19

When the moon, therefore, is in opposition north of the equator, the diurnal variation of the magnetic declination due to its varying hour-angle consists of a maximum of westerly declination when the moon's

hour-angle is 11^h, or an hour before its inferior transit, and of a minimum of westerly declination 4^h 30^m before its superior transit. The range of the variations is less than $1'\cdot5$.

When the moon is in opposition south of the equator, the variation is double,—there are two maxima and two minima; the maxima have nearly equal values, one occurring immediately before the moon's transit of the inferior meridian, the other about 2^h 25^m after the superior transit. The principal minimum occurs about 4^h 30^m after the inferior transit, and the secondary minimum about 4^h before it. The range of the variations is about $1'\cdot0$.

In the means for the whole 12 lunations, there are also two maxima and two minima; the principal maximum occurs about half an hour before the moon's inferior transit, and the principal minimum about 6 hours before the superior transit; the secondary maximum occurs about 4^h 20^m after the superior transit, and the secondary minimum about 4 hours before the inferior transit. The range of the variations is about $1'\cdot0$.

When we compare these results, with those already obtained for the sun's hour-angle, we find, that whereas the diurnal variation due to the sun has its greatest range in the summer half-year, the reverse is the case for that due to the moon which is greatest in the winter. It should be remembered, however, that in several respects the winter is to us for the moon, what the summer is for the sun. In winter, we have the greatest amount of moonshine when the moon is north of the equator. In winter, the moon is in opposition to the sun, when the former is north, and the latter south, of the equator; whereas it is the sun which is north, and the moon south, of the equator, at opposition in summer. It does not seem improbable, then, that the diurnal variation due to the moon may have a variable character through each lunation, in a manner analogous to the change of the solar diurnal variation from summer to winter, from the greatest north to the greatest south declination. If this be the case, the lunar diurnal variation will not be eliminated in the usual summations for the solar diurnal variation, and, in such a fact, we might find some explanation of the secondary maximum which is exhibited most distinctly in the solar diurnal variation for winter.

The minimum of westerly declination occurs when the sun and moon are on the same declination circle, —that is, about 5 or 6 hours before the superior transit; but the maximum occurs for the moon when near its inferior transit, and for the sun when past its superior transit.

Several of the *single* lunations shew the results given above with considerable accuracy, and the verity of the results has been confirmed by the discussion of the observations for 1845, which will be found in its proper place.

Intermittent Disturbances.

Since in the process of selecting the series of 120 and 60 days, those days only were adopted which were free from all large disturbance, the 60-day series probably being nearly free from disturbance even of the smallest class, it is evident that the differences between the means for these series and the means for the whole series of observations should indicate the law, and approximately the amount, by which intermittent disturbances affect the continuous variations. The following are results of the comparisons of the undisturbed series with the complete series :—

Effect of Intermittent Disturbances on the Yearly Mean Declination.

The mean declination for 1844, deduced from the whole series of hourly observations,	=	$25°\cdot17'\cdot06$ W.
.... 120 days	=	$25°\cdot17'\cdot08$ ...
.... 60	=	$25°\cdot17'\cdot06$ ...

This remarkable result proves that intermittent disturbances have no effect on the mean position of the declination magnet for the year; and, therefore, that in the course of the year the integrals of the disturbing forces are equally positive and negative.

Effect on the Monthly Mean of Declination.—If the days selected had been regularly distributed over each month, this result might have been expected with some accuracy; this regularity of distribution, however, could not be obtained in consistence with the other condition of freedom from irregularity; and the means for the selected days in each month may be expected to differ from the true mean, were it from the effect of secular change alone. The differences are small even with this drawback. The *average* difference (independent of sign) of the mean for the 10-day series from the true monthly means being only $0'\cdot1$, the greatest difference being $0'\cdot2$; and for the 5-day series, the average difference is $0'\cdot2$, and the greatest $0'\cdot46$. It seems therefore very probable that the effect of intermittent disturbances upon the mean position of the magnetic needle for a month is also zero.

A comparison of the daily means renders it extremely probable that were a sufficient number of observations made use of to obtain the true mean on days of much disturbance, the results would not differ more from the means for undisturbed days at the same epoch than would be accounted for by the regular laws of variation.

Effect of Intermittent Disturbances on the Hourly Means of Declination.—The following Tables contain the differences, for each month, of the hourly means obtained for the whole hourly observations, from those for the selected series of 10 days and 5 days.

TABLE XII.—Differences of the Hourly Means of Magnetic Declination, as deduced from the whole Series, and the Ten-Day Series selected in each Month; or Table V. *minus* Table VIII.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	′	′	′	′	′	′	′	′	′	′	′	′	′
12	−0·54	−0·69	−1·30	+0·26	−1·63	+0·08	−0·21	−0·90	−0·41	+0·15	−1·90	−0·82	−0·67
13	−0·08	+0·07	−0·09	−1·02	−0·47	−0·15	−0·24	−0·64	−0·63	−0·29	−1·41	−1·06	−0·50
14	+0·11	+0·11	+0·75	−0·51	−0·19	−0·36	−0·41	−1·42	−0·08	−0·18	+0·10	−0·23	−0·19
15	+0·61	+0·08	−0·38	−0·34	−0·66	−0·46	−0·29	−1·11	−0·59	+1·21	−0·17	+0·07	−0·17
16	+0·25	−0·40	+0·68	−0·33	+0·19	−0·50	−0·43	−0·78	−0·41	+1·25	−0·63	0·00	−0·10
17	−0·20	+0·04	+0·26	−0·07	+0·71	−0·16	−0·18	+0·20	+0·23	+1·33	+0·36	−0·13	+0·19
18	+0·49	−0·09	+1·08	+0·51	+0·48	−0·12	+1·04	+0·87	+1·12	+1·85	+0·21	+0·19	+0·63
19	+0·59	+0·20	+1·33	+1·21	−0·20	+0·15	+1·28	+0·48	+1·18	+1·61	+1·07	+0·07	+0·74
20	+0·35	+0·01	+1·90	+1·27	+0·56	+0·25	+1·09	+0·85	+0·73	+1·64	+1·46	+0·42	+0·87
21	+0·47	+0·07	+1·87	+1·64	+0·70	+0·60	+0·94	+0·81	+0·12	+1·84	+1·50	+1·13	+0·97
22	+0·54	+0·64	+1·62	+0·95	+0·45	+0·70	+0·44	+0·23	+0·59	+1·60	+1·15	+1·07	+0·83
23	+0·01	+0·67	+0·87	+0·53	+0·51	+0·46	−0·22	+0·37	+0·94	+0·96	+1·42	+0·91	+0·61
0	+0·17	+0·72	+0·70	+1·17	+0·08	+0·27	+0·15	+0·87	+0·16	+0·96	+1·59	+1·04	+0·66
1	+0·16	+0·64	+0·86	+0·72	+0·18	+0·31	+0·36	+0·88	+0·24	+0·11	+1·43	+0·78	+0·55
2	+0·78	+0·96	+0·02	+0·63	+0·52	+0·05	−0·06	+0·89	+0·69	−0·35	+1·54	+0·32	+0·49
3	+0·34	+0·85	+0·02	+0·78	+0·77	+0·26	+0·18	+0·60	+0·56	−0·67	+1·30	−1·06	+0·33
4	+0·29	+0·54	+0·48	+0·37	+0·62	+0·31	−0·33	+0·89	+0·18	−0·44	+0·79	+0·17	+0·31
5	+0·09	+0·33	−1·11	−0·53	+0·19	+0·14	−0·04	+0·53	+0·34	−1·01	+1·10	+0·24	+0·01
6	−0·40	+0·37	−1·94	−1·00	+0·07	+0·09	+0·01	+0·02	−1·66	−0·94	−3·11	+0·67	−0·65
7	−0·40	−0·19	−1·26	−1·28	+0·12	−0·07	−1·08	−0·27	−2·12	−0·91	−1·35	+0·07	−0·73
8	−1·15	−1·63	−1·88	−0·37	−0·55	−0·45	−0·41	−0·43	−0·74	−3·96	−2·26	−1·55	−1·30
9	−1·08	−1·25	−0·90	−1·07	−0·33	−0·25	−0·40	−1·67	−0·30	−1·98	−1·18	−0·72	−0·93
10	−0·91	−1·33	−1·41	−1·23	−0·50	−0·63	−0·57	−1·23	−0·37	−1·89	−1·06	−0·46	−0·97
11	−0·60	−0·61	−2·25	−2·15	−1·49	−0·65	−0·68	−0·17	+0·26	−2·03	−1·93	−1·12	−1·12

TABLE XIII.—Differences of the Hourly Means of Magnetic Declination, as deduced from the whole series and the Five-Day series selected in each Month; or Table V. *minus* Table IX.

Mak M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	′	′	′	′	′	′	′	′	′	′	′	′	′
12	−0·65	−0·70	−1·80	−0·09	−1·96	−0·25	−0·75	−1·41	−0·68	−0·76	−1·62	−0·34	−0·92
13	−0·62	+0·09	−0·37	−1·33	−0·83	−0·34	−0·62	−0·64	−0·79	−1·03	−1·29	−1·16	−0·74
14	−0·53	+0·07	+0·74	−0·84	−0·02	−0·73	−0·69	−1·20	−0·10	−0·13	−0·12	−0·09	−0·30
15	+0·29	+0·30	−0·47	−0·78	+0·17	−0·56	−0·23	−0·54	−0·67	+0·86	+0·46	+0·19	−0·08
16	−0·19	−0·50	+0·36	+0·23	+0·72	−0·47	−0·59	−0·87	−0·62	+1·08	−0·10	+0·03	−0·08
17	−0·48	+0·17	+0·18	+0·56	+0·98	−0·47	−0·04	+0·17	+0·33	+1·38	+0·47	+0·28	+0·29
18	+0·19	−0·08	+1·17	+1·45	+0·87	−0·28	+0·89	+0·79	+0·67	+1·55	+0·66	+0·34	+0·69
19	+0·33	+0·12	+1·26	+2·06	−0·46	+0·02	+1·12	+0·41	+1·01	+1·32	+1·67	+0·20	+0·75
20	+0·30	−0·06	+1·69	+1·51	+0·70	+0·08	+1·38	+0·99	+0·81	+1·51	+2·01	+0·44	+0·95
21	+0·49	+0·10	+2·02	+1·60	+0·93	+0·87	+1·46	+1·30	+0·35	+1·89	+1·76	+1·19	+1·17
22	+0·52	+0·60	+1·64	+0·45	+1·45	+1·43	+1·15	+0·78	+0·67	+1·52	+1·19	+1·04	+1·04
23	+0·43	+0·84	+0·41	−0·07	+1·18	+1·41	+0·39	+0·95	+1·23	+1 56	+1·45	+0·67	+0·87
0	+0·79	+1·06	+0·68	+0·30	+0·74	+0·81	+1·00	+1·42	+0·59	+1·53	+1·70	+1·22	+0·99
1	+0·70	+1·13	+0·90	+0·20	+0·63	+0·67	+0·93	+1·17	+0·61	+0·94	+1·27	+0·72	+0·83
2	+0·94	+1·42	+0·52	+0·41	+0·69	+0·37	+0·45	+0·80	+1·18	+0·40	+1·58	+0·36	+0·76
3	+0·62	+1·01	+0·74	+0·88	+0·23	+0·33	+0·26	−0·04	+0·88	+0·18	+1·27	−0·70	+0·47
4	+0·40	+0·21	+0·75	+0·53	+0·07	+0·46	−0·36	+0·42	+0·47	−0·09	+0·69	+0·17	+0·30
5	+0·26	+0·35	−1·18	−0·24	−0·38	−0·07	−0·26	+0·22	+0·71	−0·60	+0·68	+0·16	−0·03
6	−0·06	+0·47	−2·02	−0·86	−0·42	−0·26	−0·34	−0·02	−1·70	−0·80	−3·23	+0·33	−0·74
7	−0·12	−0·22	−0·84	−1·21	−0·49	−0·54	−1·57	−0·38	−1·78	−1·16	−1·67	−0·15	−0·85
8	−1·10	−1·63	−1·69	−0·19	−1·27	−0·68	−1·19	−0·77	−1·30	−3·95	−3·09	−1·75	−1·56
9	−0·80	−1·84	−0·98	−1·02	−0·87	−0·11	−0·63	−2·04	−0·79	−2·67	−1·84	−0·74	−1·19
10	−0·72	−1·74	−1·27	−1·34	−0·86	−0·62	−0·76	−1·28	−0·77	−2·27	−1·50	−0·88	−1·17
11	−1·13	−0·99	−2·57	−2·24	−1·87	−0·91	−0·89	−0·19	−0·26	−2·31	−2·24	−1·33	−1·41

Considering first the differences of the hourly means for the entire year, as obtained from a comparison of the whole with the 60-day series, we obtain the following result:—

The mean effect of disturbance is a maximum twice in the 24 hours; it is a negative maximum between 8^h and 11^h P.M., and it is a positive maximum between 9^h and 10^h A.M. The mean effect of disturbance is also a minimum twice in the day; it is a minimum between 4^h and 5^h A.M., and between 4^h and 5^h P.M. This result may be stated more generally thus:—In the afternoon at Makerstoun, when the sun is on the magnetic prime vertical, the mean disturbance of magnetic declination is zero; it increases till the sun makes its inferior transit of the magnetic meridian, when it is a maximum, and diminishes from thence till the sun is again on the magnetic prime vertical to the east; during this period the disturbance has been wholly towards the east (or negative when *westerly* declination is considered). After this, the mean effect of disturbance again increases, but in the opposite direction, being wholly to the west; it becomes a maximum when the sun transits the magnetic meridian, after which it diminishes to zero at the transit of the magnetic prime vertical.

This law will be found to hold with more or less regularity, depending on the nature of the disturbance in each month of the year.

The approximate value of the positive maximum of the mean effect of disturbance = 1′·2
.... negative .... = 1′·6

The results now given are deduced from the comparison of the whole series with the 60-day series; the comparison of the former with the 120-day series gives precisely the same law, but, as might be expected, not exactly the same values. As has been already stated, the 60-day series is nearly free from even the smallest irregularities; but this is not the case with the remaining 60 days which complete the 120-day series; these are affected by some small disturbances. It is quite possible that the smaller irregularities may obey some other law than that of the larger; if so, it should be exhibited by the differences of the means for the 120-day series (which is affected by the smaller irregularities), and for the 60-day series (which is nearly free of them). These differences are as follow:—Means for 120 days, *minus* means for 60 days.

12^h	13^h	14^h	15^h	16^h	17^h	18^h	19^h	20^h	21^h	22^h	23^h
−0′·25	−0′·24	−0′·21	+0′·09	+0′·02	+0′·10	+0′·06	+0′·01	+0′·08	+0·20	+0′·21	+0′·26
0^h	1^h	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
+0′·33	+0′·28	+0′·27	+0′·14	−0′·01	−0′·04	−0′·09	−0′·12	−0′·26	−0′·26	−0′·20	−0′·29

The law, it will be observed, is still nearly the same, the difference in the epochs being altogether trifling, when the smallness of the quantities is considered. From this, then, it appears extremely probable that the smallest irregularities obey the same diurnal law as the larger, if not the largest. Few, if any, of the largest disturbances occurred in 1844; it is probably on this account that the general laws of disturbances are shewn with so much regularity in that year; a regularity which one or two of the largest disturbances would have destroyed, and which could only be obtained again by grouping several years' observation. It is extremely probable, however, since the smallest and the larger disturbances obey the same law, that the largest will not be found an exception when a sufficient number of them are included in the discussion.

It is obvious, that by selecting the five days of next greatest regularity in each month and the next five, series of means would be obtained representing the diurnal variation, for all the days in each month, for 20, 15, 10, and 5 days, in each of which series the effect of disturbance would become less and less; in this way, by a method of limits, we might approximate to the normal form of the diurnal variation.

In the previous investigation, only the mean effect of disturbance on the normal position has been considered, we are therefore still ignorant of the law of the mean disturbance, for it is evident that the effect of disturbance on the true position may be zero when the mean disturbance is a maximum, the value of the former depending principally on the positive and negative distribution of the individual disturbances with respect to the mean position.

At first, in order to obtain the mean disturbances, the difference was taken of each observation from the monthly mean of all the observations at the corresponding hours: as it has been shewn that the arithmetical mean of all the observations is not the normal mean, or mean independent of disturbance, this process is somewhat inaccurate; it has, however, been employed at first, as the investigation of the differences of the individual observations from their arithmetical mean is important in other respects: when greater accuracy is possible, allowance should be made for the variation of the daily means due to regular and continuous laws, such as annual and secular variations.

The following Table contains the hourly means of the differences for each day in 1844:—

TABLE XIV.—Mean difference of a Single Observation from the Monthly Mean at the corresponding hour, for each Civil Day in 1844.

Civil. Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	′	′	′	′	′	′	′	′	′	′	′	′
1	1·49	2·69	1·40	2·46	2·53	1·16	1·62	2·97	[1·72]	7·79	1·65	[1·94]
2	1·45	1·51	2·35	2·43	1·36	[1·08]	1·25	2·31	1·28	2·35	2·19	1·09
3	0·72	1·75	[2·61]	2·66	2·05	1·01	1·00	1·87	1·28	1·94	[1·82]	0·68
4	0·74	[2·05]	3·62	1·79	1·05	1·11	1·25	[2·11]	1·30	1·62	2·20	2·61
5	2·57	2·17	3·03	1·54	[1·57]	0·74	0·74	2·34	1·00	1·38	1·68	1·44
6	2·76	1·78	3·10	2·60	1·87	0·65	1·00	1·43	1·27	[1·65]	1·37	0·98
7	[1·72]	2·39	4·10	[1·60]	0·80	1·02	[1·40]	1·77	1·41	1·59	1·28	0·72
8	1·52	2·27	3·65	0·95	2·29	0·94	1·77	1·10	[1·35]	1·87	1·35	[0·99]
9	1·32	1·16	2·45	1·35	1·99	[0·87]	1·89	2·40	1·19	1·47	1·67	0·78
10	1·38	1·24	[2·27]	1·37	1·02	0·83	1·71	1·43	1·67	1·71	[1·80]	1·11
11	1·29	[1·26]	1·10	1·21	1·36	0·94	0·67	[1·28]	1·53	1·47	2·60	0·92
12	1·17	1·00	1·17	1·02	[1·41]	0·86	1·52	0·85	1·12	1·44	2·72	0·60
13	0·65	0·87	1·53	0·92	1·01	1·22	1·03	1·20	1·23	[1·56]	1·15	0·67
14	[0·88]	1·00	1·11	[2·04]	1·70	0·92	[1·20]	0·69	2·16	1·82	1·66	1·17
15	0·59	1·24	1·17	1·17	1·38	0·67	1·12	1·12	[1·58]	1·22	1·56	[1·02]
16	0·54	0·59	1·12	1·07	1·04	[1·35]	1·15	1·32	1·58	1·68	8·02	1·55
17	1·02	1·38	[1·46]	6·87	1·16	2·35	1·67	1·43	1·96	1·81	[2·80]	1·07
18	1·31	[0·95]	2·25	1·32	1·07	1·78	2·16	[1·10]	1·47	2·20	2·31	1·04
19	0·77	0·97	1·95	1·20	[1·52]	1·17	1·02	0·73	1·41	1·22	1·96	1·95
20	1·09	0·71	1·12	0·74	1·10	0·74	0·56	0·87	3·77	[2·36]	1·31	3·44
21	[1·06]	0·85	0·93	[1·26]	1·98	2·97	[1·15]	1·09	1·52	5·54	1·42	2·72
22	1·15	0·98	1·23	1·32	2·80	1·25	1·85	2·48	[2·08]	1·76	5·58	[1·75]
23	1·44	0·80	1·23	1·71	3·45	[1·31]	0·52	3·22	1·35	1·62	4·51	0·80
24	0·61	0·86	[1·32]	1·27	1·45	1·10	0·81	2·75	1·44	1·59	[2·64]	0·97
25	3·84	[1·20]	1·43	3·42	1·51	0·51	2·95	[2·15]	3·02	4·82	1·25	0·64
26	0·78	0·90	1·40	2·48	[1·84]	1·30	1·76	1·47	4·63	4·60	1·77	0·87
27	1·95	1·11	1·69	2·47	1·47	0·57	2·43	1·40	3·68	[2·61]	1·30	1·13
28	[1·78]	2·52	1·85	[2·37]	1·86	0·43	[2·04]	1·54	2·29	1·60	3·34	1·71
29	1·02	2·14	3·25	1·18	1·30	1·75	1·24	1·30	[4·06]	1·48	2·13	[1·87]
30	1·51		7·94	2·15	1·57	[1·10]	1·59	2·87	3·60	1·58	1·77	3·68
31	1·59		[3·43]		0·92		2·25	2·28		1·82		1·97

Annual Variation of the Differences for the Magnetic Declination.—The following are the mean differences for each month :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1′·34	1′·40	2′·22	1′·87	1′·60	1′·12	1′·43	1′·71	1′·93	2′·26	2′·30	1′·40

There are here two maxima and two minima ; the principal minimum occurs in June, and the principal maximum in October and November ; the mean for the three months, May, June, and July, is 1′·38, which is also the mean for the three months, December, January and February. The law of the variations may be stated as follows :—The mean difference of hourly observations from their corresponding monthly means is a minimum near the solstices, and a maximum near the equinoxes. This result is in accordance with that already obtained in the discussion for the diurnal range.

TABLE XV.—Mean difference of a Single Observation from the Monthly Mean at the corresponding hour, on each day of the Moon's Age, Position in Altitude, and Distance from the Earth.

Moon's Age.	Mean Dif-ference.	Moon's Age.	Mean Dif-ference.	After Moon farthest North.	Mean Dif-ference.	After Moon farthest North.	Mean Dif-ference.	Before and after Perigee.	Mean Dif-ference.	Before and after Apogee.	Mean Dif-ference.
Day.	′	Day.	′	Day.	′	Day.	′	Day.	′	Day.	′
15	2·09	0	1·69	0	1·45	14	1·45	7	1·88	7	1·69
16	2·21	1	1·45	1	1·45	15	1·73	6	1·56	6	1·51
17	2·09	2	1·48	2	1·97	16	1·39	5	2·25	5	1·78
18	2·12	3	1·22	3	1·72	17	1·77	4	1·77	4	1·89
19	2·35	4	1·24	4	1·99	18	1·45	3	1·50	3	2·05
20	1·58	5	1·45	5	2·20	19	1·68	2	1·60	2	2·66
21	1·64	6	2·23	6	2·07	20	1·72	1	1·79	1	1·58
22	1·42	7	1·53	7	1·62	21	1·66	P	1·52	A	1·82
23	1·31	8	1·80	8	1·69	22	1·69	1	1·88	1	1·27
24	1·44	9	1·70	9	1·85	23	2·50	2	1·55	2	1·33
25	1·28	10	2·27	10	1·52	24	2·28	3	1·52	3	1·50
26	1·16	11	1·97	11	1·30	25	1·80	4	1·50	4	1·66
27	1·27	12	2·42	12	1·50	26	1·73	5	1·83	5	1·68
28	1·18	13	2·35	13	1·42	27	1·47	6	1·61	6	1·94
29	1·26	14	2·23					7	1·69	7	1·95

Variation of the Mean Differences with respect to the Moon's Age.—The first portion of the previous table contains the hourly means of the differences for each day of the moon's age. The result in this case, also, is the same as that obtained in the discussion of the diurnal ranges, namely, a maximum about the opposition, and a minimum near the conjunction; there is the appearance of a secondary maximum at the conjunction, a minimum occurring a few days before it and a few days after it. The following are means of groups :—

14 days to 16 days, Full Moon,	2′·18	29 days to 1 day, New Moon,	1′·47
17 ... 20 ...	2′·04	2 ... 5 ...	1′·35
21 ... 24 ...	1′·45	6 ... 9 ...	1′·82
25 ... 28 ...	1′·22	10 ... 13 ...	2′·25

So that the average difference of an observation from the monthly mean for the corresponding hour is about twice as great at opposition as at conjunction.

Variation of the Mean Differences with respect to the Moon's Declination.—From the two preceding results (for the annual variation and moon's age) it follows that maxima of the differences should occur when the moon is near the equator, and minima when it is farthest north and farthest south; that this is the fact, may be seen from the second portion of Table XV., and also from the following means of groups :—

27 days to 1 day, Moon farthest North,	1′·46	13 days to 15 days, Moon farthest South,	1′·53
2 ... 5 ...	1′·97	16 ... 19 ...	1′·58
6 ... 8 ...	1′·80	20 ... 22 ...	1′·69
9 ... 12 ...	1′·64	23 ... 26 ...	2′·08

From these groups the principal minimum occurs when the moon is farthest north, and the two maxima occur when the moon is north of the equator.

Diurnal Variation of the Mean Differences.—Tables XVI. and XVII. contain the mean differences for each hour in each month, each quarter, and the year. From the means for each hour for the year, it appears that the average disturbance is a maximum about $8\frac{1}{2}^{h}$ P.M.; the minimum occurs perhaps about noon, but the value of the average disturbance oscillates within small limits between 3 A.M. and 5 P.M. The two consecutive hours that have the highest mean value are 8 P.M. and 9 P.M., and the two that have the lowest mean value are noon and 1 P.M. Had observations been made at the *even* Göttingen hours only, the maximum would have been exhibited at 11 P.M. Makerstoun mean time.

TABLE XVI.—Mean difference of a Single Observation from the Monthly Mean at the corresponding hour, for each Hour in each Month.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h.	′	′	′	′	′	′	′	′	′	′	′	′
12	1·10	1·36	3·01	3·13	2·43	1·16	1·31	2·34	1·67	1·96	2·41	1·38
13	0·87	1·58	2·64	1·85	1·99	1·50	1·42	2·17	1·87	1·82	2·33	2·81
14	1·07	1·21	2·61	1·58	2·26	1·38	1·38	2·62	1·70	1·92	1·81	1·20
15	1·48	0·89	1·60	2·15	1·51	1·43	1·58	2·04	1·87	1·89	1·57	0·94
16	1·10	1·54	2·30	1·91	2·33	1·58	0·97	1·16	2·11	2·40	1·19	1·04
17	0·98	1·01	1·41	1·57	1·64	1·34	1·62	1·68	2·45	3·03	1·75	1·13
18	1·49	0·78	1·54	1·49	1·31	0·90	1·91	1·49	2·42	2·99	1·37	0·99
19	1·31	0·79	1·37	1·88	1·25	0·91	2·05	1·12	2·35	2·65	1·23	0·67
20	1·13	0·90	1·89	1·81	1·44	0·89	1·87	1·53	1·42	2·23	1·69	0·70
21	1·19	0·90	1·73	2·23	1·62	1·33	1·54	1·56	1·62	2·55	1·76	1·08
22	1·38	1·09	1·78	2·00	1·54	1·07	1·25	1·35	1·39	2·37	1·86	0·89
23	1·03	1·11	1·33	1·40	1·54	1·62	1·51	1·38	1·52	1·60	2·20	0·96
0	1·44	1·37	1·20	2·34	0·87	1·13	1·96	1·53	0·94	1·81	2·31	1·33
1	1·44	1·03	1·33	1·27	1·20	1·26	1·80	1·47	1·42	1·50	1·87	1·29
2	1·63	1·26	1·85	1·74	1·18	1·06	1·35	1·86	1·93	1·43	1·82	1·15
3	1·41	1·38	1·45	1·56	1·40	0·91	1·48	2·01	1·67	1·76	1·85	2·71
4	1·14	1·43	1·28	1·73	1·28	0·91	1·34	1·54	1·40	1·38	2·25	1·73
5	0·93	1·54	3·54	1·69	1·17	0·71	0·93	1·51	1·86	1·52	1·40	1·09
6	1·54	1·25	3·87	1·64	1·04	0·70	1·24	1·48	2·93	2·17	6·49	1·16
7	1·47	1·69	3·32	1·84	1·53	0·97	1·57	1·27	3·30	1·63	3·39	1·19
8	2·36	2·34	3·01	1·54	2·26	0·92	0·97	1·32	2·87	5·68	4·27	2·55
9	1·85	3·07	2·83	1·52	1·54	0·86	0·82	2·47	1·62	2·60	2·65	1·94
10	1·55	2·11	3·19	1·90	1·65	1·25	1·13	1·97	2·12	2·61	2·59	1·96
11	1·38	1·89	3·13	3·17	2·35	1·07	1·28	2·25	1·80	2·80	3·11	1·66

TABLE XVII.—Mean difference of a Single Observation from the Monthly Mean at the corresponding hour, for each Hour in each of the Astronomical Quarters, and in the year 1844.

Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h.	′	′	′	′	′	h.	′	′	′	′	′
12	1·62	2·52	1·65	2·00	1·94	0	1·69	1·64	1·33	1·44	1·52
13	1·99	2·03	1·64	1·95	1·90	1	1·53	1·21	1·42	1·46	1·41
14	1·36	1·81	1·68	2·09	1·73	2	1·53	1·62	1·20	1·73	1·52
15	1·33	1·55	1·51	1·93	1·58	3	1·98	1·46	1·27	1·82	1·63
16	1·11	1·92	1·62	1·88	1·63	4	1·70	1·48	1·19	1·44	1·45
17	1·28	1·33	1·54	2·38	1·64	5	1·14	2·27	0·94	1·63	1·49
18	1·29	1·28	1·39	2·29	1·56	6	3·04	2·26	1·00	2·18	2·12
19	1·07	1·35	1·42	2·03	1·47	7	2·01	2·29	1·36	2·03	1·92
20	1·17	1·54	1·41	1·73	1·46	8	3·05	2·30	1·40	3·30	2·51
21	1·34	1·63	1·50	1·92	1·60	9	2·14	2·46	1·08	2·24	1·98
22	1·38	1·63	1·29	1·71	1·50	10	2·02	2·41	1·35	2·24	2·00
23	1·39	1·29	1·56	1·50	1·43	11	2·04	2·74	1·58	2·29	2·16

When the differences are combined for periods of three months, we find the following approximate epochs of maximum and minimum :—

Nov., Dec., Jan.;	minimum, 7^h A.M., Makerstoun mean time;	maximum, 8^h P.M.
Feb., Mar., April;	.... between 5^h A.M. and 4^h P.M.;	.... 11^h P.M. { Value nearly constant between 5^h P.M. and 1^h A.M.
May, June, July;	.... between 5^h P.M. and 6^h P.M;	.... 2^h A.M.
Aug., Sept., Oct.;	.... 1^h P.M.;	.... 8^h P.M.

These indicate that the diurnal law of variation of disturbances varied in 1844, with season; this may be due, however, to the intermittent character of the phenomenon, and the differences may disappear in a greater number of observations.

Annual Variation of the number *of Positive Differences.*—The following are the numbers of differences in 100 which are positive in each month of 1844 :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
52·7	51·8	51·4	48·4	49·7	52·8	50·0	49·9	53·0	46·0	48·9	55·3

In order to obtain more certain mean values for each epoch, the mean for each three months is given below as the mean for the middle month :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
53·3	52·0	50·5	49·8	50·3	50·8	50·9	51·0	49·6	49·3	50·1	52·3

From which it appears, that the number of excursions of the north end of the declination magnet, to the west of the monthly mean position in 1844, was a maximum in January and about July, and a minimum in April and October; or a maximum after the solstices, and a minimum after the equinoxes. The reverse, of course, holds for the number of negative deviations.

Diurnal Variation of the number *of Positive Differences.*—The numbers of positive differences in 100 for each hour of Makerstoun mean time for 1844, are as follow :—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	12^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
58·6	58·3	55·7	53·2	50·0	44·0	36·0	39·2	41·3	38·9	37·9	41·7	37·6	42·7	43·0	46·2	47·8	48·7	59·2	67·5	70·7	66·6	67·8	66·2

Whence the number of excursions to the west of the monthly mean position for each hour is a minimum about 9^h or 10^h A.M., and a maximum about 8^h P.M. The reverse is the case for the number of excursions to the east of the mean position, and the numbers of positive and negative differences are equal about 4^h A.M. and 5^h P.M. This result is evidently related to that already obtained for the mean effect of disturbance.

The previous conclusions have reference to the differences of the observations from their arithmetical mean, which, it has been shewn, is in all probability not the normal mean; we are therefore still ignorant of the actual sums of the positive and of the negative excursions at different epochs. These differences might be determined approximately from the mean effects of disturbance, and the total sums of differences already found; the error would be due solely to the observations occurring between the arithmetical mean and the normal mean. The positive and negative sums of difference have, however, been determined, by employing the normal mean (as deduced from the five days of least disturbance in each month) instead of the arithmetical mean; the differences thus obtained may be considered as due to disturbances of all classes, but chiefly to intermittent disturbances. For this reason, the following results are distinguished from the former results, in terming them means of disturbances, instead of means of differences.

Annual Variation of the Mean Disturbance.—The following are the average disturbances for a single observation of magnetic declination, in each month of 1844 :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1′·31	1′·42	2′·15	1′·90	1′·63	1′·18	1′·51	1′·77	1′·88	2′·15	2′·15	1′·34

This gives the same law as that already found from the sums of differences; the values are but slightly different, being on the whole less for the disturbances or differences from the normal mean.

The mean disturbance of a single observation in 1844, ... = 1′·70

Diurnal Variation of the Positive and Negative sums of Disturbances.—The following are the sums for each hour in 1844 :—

	12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
+	156′	178′	225′	240′	244′	294′	345′	355′	391′	455′	413′	375′	408′	361′	363′	329′	280′	222′	182′	151′	107′	110′	117′	105′
−	446	413	322	264	266	201	127	118	92	87	87	103	97	102	126	183	184	233	415	416	595	487	484	549

These values, when projected, produce two curves of remarkable regularity. The sum of the positive disturbance is a minimum about 10^h P.M.; it increases regularly from thence till about $9^h\ 10^m$ A.M.; the interpolated maximum occurs about 10^h A.M.; it then diminishes, after noon, with the previous regularity, till about 8^h P.M. The sum of the negative disturbance, on the contrary, is a maximum about 10^h P.M., and it becomes a minimum about 10^h A.M.; the range of the positive sums is about a tenth less than the range of the negative sums. Each of the two curves is irregular once in the 24 hours, and, curiously enough, this does not occur at the same time; the negative disturbance curve is irregular from 8^h P.M. till 11^h P.M., while the positive disturbance curve has nearly constant ordinates. On the contrary, the positive disturbance curve is irregular from about 9^h A.M. till 1^h P.M., while the regularity of the negative curve is most marked. The characteristics of these curves are therefore identical, when we consider the ordinates at 12 hours' interval. It is obvious, then, that we have in the positive disturbance curve a simultaneous representative of the negative disturbance curve for our periœci, the sign of motion with reference to space, or the sun, being the same for both.

The result obtained for the year is also shewn, with considerable regularity, in the sums for each month. In the discussion of the total sums of differences, it appeared that the epochs of maximum and minimum varied with season. A consideration of the positive and negative portions, renders it probable that this variation is accidental; thus, though the minimum of the total sums of differences occurred, for the summer quarter, at 5^h or 6^h P.M., the positive disturbance has its maximum, for the same quarter, about 10^h A.M., and its minimum about 10^h P.M., the reverse being true of the negative disturbance, which is exactly the law of the sums from the whole observations of the year.

Annual Variation of the number *of Positive Disturbances.*—The following are the numbers per cent. of hourly observations in each month, which were positive, or to the west of the normal mean :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
51·5	55·3	59·8	49·5	51·1	52·2	45·5	50·8	54·7	47·2	58·0	60·4

Taking the mean for each three months as the mean for the middle month—

55·7	55·5	54·9	53·5	50·9	49·6	49·5	50·3	50·9	53·3	55·2	56·6

From which it would appear, that the number of excursions to the west of the normal mean is a maximum at the winter solstice, and a minimum at the summer solstice. The reverse holds for the excursions to the east of the normal mean. In the year 1844, there were in 100 hourly observations of magnetic declination, 53 to the west and 47 to the east of the normal means.

Diurnal Variation of the number *of Positive Disturbances.*—The numbers *per cent.* for each hour, in 1844, which are to the west of their normal means, are—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
38·5	39·2	47·5	50·0	44·3	50·6	57·0	58·9	64·3	69·1	66·6	64·6	69·7	65·3	62·1	59·6	58·3	51·9	48·4	47·1	38·2	41·7	38·2	39·2

The number is a maximum at about 11^h A.M., and a minimum about $10\frac{1}{2}^h$ P.M. There are twice as many excursions to the west of the normal mean at 10^h A.M., as there are to the east, and there are about three excursions to the east for two to the west at 10^h P.M.

Diurnal Variation of the Positive and Negative Means of Disturbance.—Since the number of positive disturbances is greatest when the sums of their excursions are greatest, and least when the sums are least, it is still unknown whether the increase of the sums is solely due to the increase of the number of disturbances, or whether the average positive or negative excursion increases with the number. The following are the average positive and negative excursions for each hour, together with the average of all the disturbances, without respect to sign :—

	12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
+	1·29	1·45	1·51	1·53	1·75	1·85	1·93	1·92	1·93	2·10	1·97	1.85	1·86	1·76	1·86	1·76	1·53	1·36	1·20	1·02	0·89	0·84	0·98	0·85
−	2·31	2·16	1·95	1·68	1·52	1·30	0·94	0·91	0·82	0·90	0·82	0·92	1·02	0·94	1·06	1·44	1·41	1·54	2·56	2·50	3·07	2·66	2·50	2·87
All.	1·91	1·88	1·74	1·60	1·62	1·58	1·50	1·50	1·54	1·73	1·59	1·52	1·60	1·48	1·56	1·63	1·48	1·45	1·90	1·81	2·23	1·90	1·92	2·08

The average value of the excursions, therefore, varies considerably: the positive excursions from the normal mean have their greatest average value about 9^h A.M., and their least average value about 10^h P.M., the least value being less than half the largest. The average negative excursion is least about 10^h A.M., and greatest about 9 P.M (using the interpolated epoch), the least average being less than a third of the greatest. The least positive and negative averages have the same value, but the greatest negative average is fully a third greater than the greatest positive average. The average value of *all* the excursions from the normal mean is a maximum (using interpolated epochs) between 9^h and 10^h P.M.; the time of minimum is not well marked; minima occur about 7^h A.M. and 5^h P.M., and there is the appearance of a secondary maximum about 9^h A.M. The greatest average is to the least in the ratio of about 3 to 2.

Probable Disturbance of Magnetic Declination.—In order to determine the probable disturbance for each hour of the day, Dr LLOYD has proposed to use the differences from the arithmetical means as errors in the observations of a constant quantity, and to consider the square root of the mean of the squares of these differences, as the *mean disturbance*, corresponding to the mean error in the calculus of probabilities. It is obvious that the ordinary methods of the calculus of probabilities could not be employed if the probable error were considered with reference to the *normal* mean, which is not the *arithmetical* mean; considering the probable error, however, with reference to the arithmetical mean, it is certain from the foregoing conclusions that the distribution of the individual differences or errors is not such as will satisfy the hypothesis of the observations of a constant quantity. The differences are not distributed equally, positively and negatively; nor is the difference from such a distribution constant: a new hypothesis for the mode of distribution would be requisite for each hour. Independently of this consideration, it will be found from the following results that the number of errors occurring within certain limits is not satisfied by the usual function of the errors obtained from the calculus of probabilities.

The following Tables may be considered a contribution to the theory of the distribution of disturbances of the magnetic declination, with respect to the arithmetical means of all the observations.

TABLE XVIII.—Number of Positive and Negative Differences which occur between the limits of successive Minutes for each Month, and for the year 1844.

Month.		0′ to 1′.	1′ to 2′.	2′ to 3′.	3′ to 4′.	4′ to 5′.	5′ to 6.′	6′ to 7′.	7′ to 8′.	8′ to 9′.	9′ to 10′.	10′ to 15′.	15′ to 20′.	20′ to 25′.	25′ to 30′.	30′ to 40′.
Jan.	+	184	103	22	13	5	6	5	1	2	...	...	...	...	...	...
	−	154	85	38	11	9	4	3	...	1	1	...	1	...	...	...
Feb.	+	157	92	38	13	5	1	2	1	1	...	2	...	...	...	..
	−	158	76	22	12	4	3	4	2	...	2	3	1	...	...	...
March	+	102	105	55	22	9	8	6	4	1	3	5	1	...	...	...
	−	142	73	29	17	6	6	8	2	3	1	10	2	2	1	...
April	+	135	80	38	14	12	6	4	1	2	1	7	2	...	...	...
	−	135	85	49	22	9	4	5	3	3	...	3	...	...	1	...
May	+	136	85	65	22	4	5	...	1	...	1	3	...	...	...	...
	−	156	82	48	20	4	4	4	2	...	...	4	1	...	...	...
June	+	199	81	19	7	6	3	...	...	1	1	...	...	...	...	...
	−	161	63	38	11	6	2	1	...	...	1	...	...	...	...	...
July	+	167	88	29	17	12	7	3	...	...	1	...	...	...	...	...
	−	148	90	54	14	9	2	4	1	...	...	...	...	...	...	...
Aug.	+	132	105	34	21	13	10	2	1	2	1	1	...	...	...	...
	−	147	71	54	28	11	5	2	6	...	1	...	...	...	...	...
Sept.	+	117	95	60	21	9	7	2	3	1	...	2	1	...	...	...
	−	111	83	40	13	10	5	6	2	2	1	5	2	...	...	...
Oct.	+	108	63	50	35	14	1	9	2	5	4	3	2	1	1	...
	−	116	103	74	22	12	4	6	4	1	...	4	2	...	1	...
Nov.	+	87	71	66	40	18	7	4	6	...	1	4	1	...	...	...
	−	124	108	34	18	5	8	3	3	4	1	4	1	1	2	2
Dec.	+	178	110	32	10	5	5	1	3	1	...	...	...	...	...	...
	−	162	70	14	10	4	4	3	...	2	4	1	...	2	1	...
Year	+	1702	1078	508	235	112	66	38	23	16	13	27	7	1	1	...
	−	1714	989	494	198	89	51	49	25	16	12	34	10	5	6	2

TABLE XIX.—Number of differences in 1000 (without reference to sign), which occur between the limits of successive minutes, for each Month, and for the Year 1844.

Month.	0′ to 1′.	1′ to 2′.	2′ to 3′.	3′ to 4′.	4′ to 5′.	5′ to 6.′	6′ to 7′.	7′ to 8′.	8′ to 9.′	9′ to 10′.	10′ to 15′.	15′ to 20′.	20′ to 25′.	25′ to 30′.	30′ to 40.′
January	528	290	93	37	22	15	12	2	5	2	...	2	...	...	...
February	525	280	100	42	15	7	10	5	2	3	8	2	...	...	...
March	391	285	135	62	24	22	22	10	6	6	24	5	3	2	...
April	433	264	140	58	34	16	14	6	8	2	16	3	...	2	...
May	451	258	174	65	12	14	6	5	...	2	11	2	...	...	...
June	600	240	95	30	20	8	2	...	2	3	...	...	...	...	...
July	486	275	128	48	32	14	11	2	...	2	...	...	...	...	...
August	431	272	136	76	37	23	6	11	3	3	2	...	...	...	...
September	380	297	167	57	32	20	13	8	5	2	12	5	...	...	...
October	346	256	191	88	40	8	23	9	9	6	11	6	2	3	...
November	338	287	160	93	37	24	11	14	6	3	13	3	2	3	3
December	545	288	074	32	14	14	6	5	5	6	2	...	3	2	...
Year	453	274	133	57	27	16	12	6	4	3	8	2	1	1	...

Annual Variation of the Probable error of an Observation of Magnetic Declination.—From Table XIX. I have determined by a graphic interpolation the probable error of a single observation from the monthly mean for the corresponding hour, that is to say, I have determined approximately the error for which there are as many greater as there are less than itself. These are :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0′·93	0′·94	1′·35	1′·20	1′·16	0′·78	1′·04	1′·20	1′·36	1′·58	1′·51	0′·90

The probable error of a single observation from the monthly mean for the corresponding hour (without reference to which hour) is a minimum at the solstices, and a maximum at the equinoxes : the principal minimum occurs at the summer solstice, when the probable error is only 0′·78, or about half the value of the principal maximum which occurs in October. In order to shew the difference of these values from those to be deduced by the aid of the calculus of probabilities, we may obtain the latter with sufficient accuracy by means of the formula*

$$\text{Probable error} = 0{\cdot}845 \times \text{mean of errors},$$

which formula gives the following values :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1′·13	1′·18	1′·88	1′·58	1′·35	0′·95	1′·21	1′·45	1′·63	1′·91	1′·95	1′·18

values which are from a fourth to a third more than the truth.

Diurnal Variation of the Probable Error of an Observation of Magnetic Declination.—The following are probable errors of a single observation for each hour (without reference to month) from the monthly means at the corresponding hours, deduced from Table XXI. by a graphic interpolation.

	1h A.M.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	0h	1h P.M.	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h	12h
	1′·12	0′·96	1′·10	0′·93	0′·95	0′·95	1′·04	1′·00	1′·17	1′·10	1′·17	1′·04	1′·01	1′·24	1′·24	0′·97	0′.79	1′·16	1′·24	1′·63	1′·41	1′·38	1′·55	1′·22
Mean of two.	1′·04		1′·02		0′·95		1′·02		1′·14		1′·11		1′·13		1′·11		0′·98		1′·44		1′·40		1′·38	

From these values it appears that the probable error of a single observation from the monthly mean, for the corresponding hour (without reference to the month to which the observation belongs), is a minimum about 5^h A.M., and about 5^h P.M., being, in both cases, rather less than a minute ; it is a principal maximum between 9^h and 10^h P.M., being nearly a minute and a-half (1′·5), and a secondary maximum about noon, being about 1′·13.

On the whole, it appears that, if it were required to make a single observation which should be as near to the monthly mean for the corresponding hour as possible, the observation should be made in June, and about 5^h A.M. or 5^h P.M. When a greater number of observations are obtained, more accurate values for each hour in *each* month may be found. Upon examining the distribution of the errors in the months of May, June, and July, 5^h or 6^h P.M. is found to be the hour of the smallest probable error in each month ; the probable error at 5^h

* ENCKE on "The Method of Least Squares." *Taylor's Scientific Memoirs*, vol. ii., p. 355.

or 6h P.M. in June is only *half a minute* (0′·5); about this hour, also, the numbers of positive differences and negative differences are nearly equal; and since the mean of the observations at 6h P.M. in June is within half a minute of the monthly mean of all the observations, the probable error of a single observation in June 1844 at 6h P.M. would be only about 0′·5 from the mean declination for the month: a degree of accuracy which is quite equal to any thing that can be expected from a month's observations with the best portable apparatus.

TABLE XX.—Number of Positive and Negative Differences which occur between the limits of successive Minutes for each Hour in 1844.

Makerstoun Mean Time. h.		0′ to 1′.	1′ to 2′.	2′ to 3′.	3′ to 4′.	4′ to 5′.	5′ to 6′.	6′ to 7′.	7′ to 8′.	8′ to 9′.	9′ to 10′.	10′ to 15′.	15′ to 20′.	20′ to 25′.	25′ to 30′.	30′ to 40′.
12	+	76	59	30	9	2	4	...	...	2	...	1	1	...	...	...
	−	58	24	19	6	6	...	6	4	1	1	2	1	1	...	...
13	+	78	69	16	4	4	5	1	1	2	2	1	...	...	...	...
	−	65	19	15	10	7	3	2	1	4	2	1	1	...	1	...
14	+	93	44	21	4	6	3	1	1	...	1	...	1	...	...	...
	−	67	25	18	8	5	3	4	3	1	...	2	...	...	...	...
15	+	80	46	18	11	4	4	3	...	1	...	...	...	...	...	...
	−	66	36	19	13	8	1	2	...	1	...	1	...	...	...	...
16	+	90	30	16	8	2	2	1	1	1	3	3	...	...	...	...
	−	75	36	27	8	2	3	4	...	...	...	2	...	...	...	...
17	+	80	30	9	3	4	3	2	...	...	...	6	...	...	1	...
	−	81	48	26	12	4	2	1	1	...	...	...	...	...	...	...
18	+	64	16	10	4	2	8	2	1	2	...	2	1	1	...	...
	−	99	62	29	10	...	1	...	...	...	...	...	...	...	...	...
19	+	61	28	13	5	7	3	...	1	2	...	1	2	...	...	...
	−	91	68	27	2	2	1	...	...	...	...	...	...	...	...	...
20	+	71	20	16	6	4	5	5	...	...	1	2	...	...	...	...
	−	85	56	31	10	1	...	...	...	...	...	...	...	...	...	...
21	+	52	30	18	6	6	1	1	2	...	2	4	...	...	...	...
	−	84	64	29	13	1	...	...	...	...	...	...	...	...	...	...
22	+	50	29	17	9	4	...	6	1	1	...	2	...	...	...	...
	−	96	65	26	8	...	...	...	...	...	...	...	...	...	...	...
23	+	56	32	20	13	3	2	3	1	...	...	1	...	...	...	...
	−	81	66	28	5	2	...	...	...	...	...	...	...	...	...	...
0	+	53	30	12	9	4	3	1	1	2	1	...	2	...	...	...
	−	98	53	35	8	1	...	...	...	...	...	...	...	...	...	...
1	+	59	36	13	17	4	...	3	...	1	1	...	...	...	...	...
	−	96	46	27	8	2	...	...	...	...	...	...	...	...	...	...
2	+	52	39	21	13	3	2	...	5	...	...	...	...	...	...	...
	−	77	68	22	6	2	2	2	...	...	...	...	...	...	...	...
3	+	53	54	13	7	10	5	...	2	1	...	...	...	...	...	...
	−	75	63	15	5	6	...	1	1	...	...	1	1	...	...	...
4	+	73	38	19	8	5	6	...	1	...	...	...	...	...	...	...
	−	87	50	14	2	1	2	2	2	1	1	1	...	...	...	...
5	+	70	42	20	11	6	1	2	...	...	...	1	...	...	...	...
	−	100	33	11	6	2	1	2	...	1	1	1	1	1	...	...
6	+	80	41	27	23	7	5	...	2	1	...	...	...	...	...	...
	−	63	26	9	6	5	1	5	3	...	1	6	...	...	...	2
7	+	92	68	34	10	7	...	...	...	...	...	1	...	...	...	...
	−	42	15	13	8	4	6	4	2	...	1	5	1	1	...	...
8	+	81	60	46	21	9	...	3	1	...	...	1	...	...	...	...
	−	25	16	9	11	8	4	2	4	2	1	5	2	1	2	...
9	+	78	85	33	9	...	1	...	...	...	2	1	...	...	...	...
	−	36	12	15	10	7	10	6	3	3	...	2	1	...	...	...
10	+	86	87	22	9	3	2	2	2	...	...	...	...	...	...	...
	−	30	20	14	11	6	6	3	1	1	3	3	1	1	...	...
11	+	74	65	44	16	7	1	1	...	...	...	...	...	...	...	...
	−	34	18	16	13	7	6	3	...	2	1	2	2	...	2	...

TABLE XXI.—Number of differences in 1000 (without reference to sign), which occur between the limits of successive minutes in each hour of 1844.

Mak. M. T.	0′ to 1′.	1′ to 2′.	2′ to 3′.	3′ to 4′.	4′ to 5′.	5′ to 6′.	6′ to 7′.	7′ to 8′.	8′ to 9′.	9′ to 10′.	10′ to 15′.	15′ to 20′	20′ to 25′.	25′ to 30.′	30′ to 40′.
h. 12	427	264	156	48	25	13	19	13	10	3	10	6	3	...	...
13	455	280	99	45	35	25	10	6	19	13	6	3	...	3	...
14	510	220	124	38	35	19	16	13	3	3	6	3	...	...	...
15	446	261	118	76	38	16	16	...	6	...	3	...	...	...	...
16	525	210	137	51	13	16	16	3	3	10	16	...	...	...	...
17	513	248	111	48	25	16	10	3	...	...	19	...	...	3	...
18	519	248	124	45	6	29	6	3	6	...	6	3	3	...	...
19	484	306	127	22	29	13	...	3	6	...	3	6	...	...	...
20	497	242	150	51	16	16	16	...	...	3	6	...	...	...	...
21	433	299	150	61	22	3	3	6	...	6	13	...	...	...	...
22	465	299	137	54	13	...	19	3	3	...	6	...	...	...	...
23	436	312	153	57	16	6	10	3	...	...	3	...	...	...	...
0	481	264	150	54	16	10	3	3	6	3	...	6	...	...	...
1	494	261	127	80	19	...	10	...	3	3	...	...	...	...	...
2	411	341	137	61	16	13	6	16	...	...	...	...	...	...	...
3	408	373	89	38	51	16	3	10	3	...	3	...	3	...	...
4	510	280	105	32	19	25	6	10	3	3	3	...	...	...	...
5	541	239	99	54	25	6	13	...	3	3	6	3	3	...	...
6	455	213	115	92	38	19	16	16	3	3	19	...	...	...	6
7	427	264	150	57	35	19	13	6	...	3	19	3	3	...	...
8	338	242	175	102	54	13	16	16	6	3	19	6	3	6	...
9	363	309	153	61	22	35	19	10	10	6	10	3	...	...	...
10	369	341	115	64	29	25	16	10	3	10	10	3	3	...	...
11	344	264	191	92	45	22	13	...	6	3	6	6	...	6	...

Note on the Diurnal Variation of the Magnetic Declination.—It is obvious from the previous investigations that the diurnal variation is a compound phenomenon; in its observed form it presents a curve with two maxima and two minima, the principal maximum occurring immediately after noon, the secondary maximum shortly after midnight, and the principal minimum about 10^h P.M. or 6^h A.M., at the former if the amount of disturbance for the year be considerable. When the diurnal variation is considered in days nearly free from intermittent disturbance, it is found that the minimum about 10^h P.M. almost wholly disappears, and the minimum about 6^h A.M. is increased. Although, however, the 10^h P.M. minimum and the secondary maximum wholly disappear, the diurnal curve, even when unaffected by disturbance, does not become a regular curve of two branches; on the contrary, there is still evidence of the action of a secondary or superposed cause of variation in the flattening of the curve from about 6^h P.M. till about 2^h A.M., in the sudden check in the rate of the easterly progression about 6^h P.M., and its sudden increase again about 2^h A.M. These epochs, it will be observed, are the times of the principal minimum and maximum for our periœci. We might suppose the diurnal variation, therefore, when unaffected by intermittent disturbances, due to two operations of the same cause, a direct action proper to one side of a zone producing a regular motion having its greatest westerly limit after noon, and its most easterly limit about 6^h A.M.; and an indirect or reflected action upon the opposite side of the same zone producing similar motions simultaneously, but of less magnitude. Such a hypothesis, which has an analogy to that of tides (say in the atmosphere), would satisfy the simplest form of the diurnal curve for the year, and for all the months for which the sun is north of the equator; another element perhaps requires consideration for the winter months.

The form of the diurnal curve is different at different seasons of the year. Colonel SABINE has shewn, in his discussion of the St Helena Observations, that the diurnal curve has two opposite forms at St Helena, according as the sun is to the north or south of the equator; the one corresponding to the diurnal motion for the northern hemisphere, the other to that for the southern hemisphere. An examination of the Makerstoun Observations will shew an equivalent fact. During the months that the sun is north of the equator the form and range of the diurnal curve have but little variation, but they change considerably in the months for which the sun is south of the equator. If we take the means of the 10 days of least disturbance in the two months

of June and July as the most perfect representative of the diurnal curve at Makerstoun for the sun north of the equator, and compare this curve with that similarly obtained for the months of December and January when the sun is farthest south, we obtain the following variations corresponding to the differences of the hourly means for the two curves :—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
3′·43	4′·12	4′·22	5′·00	5′·69	7′·12	7′·89	7′·77	6′·85	5′·56	4′·47	2′·29	1′·32	0′·40	0′·00	0′·16	1′·44	2′·09	2′·39	2′·21	2′·09	2′·39	2′·54	3′·09

It follows, therefore, that by the addition of the above quantities, representing the motion of the magnetic needle for the southern hemisphere, which has its maximum of westerly declination about 6^h A.M., and its minimum about 2^h P.M., to the quantities representing the diurnal motion for midsummer at Makerstoun, we obtain variations which represent the midwinter motion for the same place. The same result is obtained in the comparison of the midsummer curve with that for November and February, and even for October and March, though with less accuracy as regards the epoch of minimum for the differences.

It will be interesting to determine, from other observations, the latitude for which the midwinter curve ceases to have the characteristic of a northern curve.

HORIZONTAL COMPONENT OF MAGNETIC FORCE.

TABLE XXII.—Mean Values of the Variations of the Horizontal Component of Magnetic Force, the whole Horizontal Component being Unity, for each Civil Week-Day, Week, and Month of 1844.

Civil. Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
1	2499	3002	2850	1933	2842	4579	4224	5142	[4110]	2943	5002	[5257]
2	2187	2264	2849	2170	3437	[4291]	4635	3391	3931	4172	4607	5429
3	2719	2374	[2395]	2338	3104	4175	4732	3608	4109	4147	[4791]	5338
4	2969	[2347]	2428	2237	2842	4392	4668	[4095]	4424	4299	4635	5400
5	2755	2080	1970	3195	[3326]	4280	4430	4228	4322	4319	4749	5097
6	2376	2134	1700	2533	3798	4355	4313	4095	4246	[4411]	4983	5228
7	[2519]	2227	2083	[2904]	3431	4336	[4495]	4109	4974	4627	4903	5404
8	2474	2401	1898	2780	3345	4018	5209	4603	[4547]	4292	4976	[5439]
9	2171	2671	2493	3237	3170	[4301]	4054	5267	4438	4782	5114	5624
10	2363	2559	[2401]	3443	3550	4446	4298	3920	4511	4840	[4822]	5548
11	2485	[2767]	2521	3151	3412	4140	4494	[4505]	4792	4900	4816	5734
12	2454	2743	2471	3367	[3515]	4511	4778	4267	4663	4742	4431	5708
13	2709	3004	2936	3363	3682	4890	4882	4362	4792	[4871]	4687	5575
14	[2692]	3224	3200	[3277]	3660	4430	[4748]	4613	4809	5106	4970	5268
15	2748	3172	3210	3321	3615	4371	5064	4585	[4595]	4761	5239	[5305]
16	2853	2856	3004	3063	3580	[4479]	4649	4630	4553	4872	4619	4714
17	2905	3496	[3065]	3396	3490	4388	4619	4572	4319	4676	[4612]	5078
18	2849	[3183]	3077	2549	4012	4533	4224	[4696]	4434	5016	4309	5484
19	2803	3212	2797	2733	[3998]	4260	4297	4634	4602	5187	3970	4963
20	2660	3228	3097	2730	4417	4502	4749	4910	4383	[4234]	4564	4868
21	[2866]	3135	3121	[3167]	4494	4539	[4487]	4847	3826	2514	4637	4589
22	2761	3013	3164	3510	3998	4222	4603	4795	[4367]	4026	4050	[5064]
23	3265	3028	3108	3752	3419	[4333]	4600	4591	4386	3979	3437	5201
24	2859	3476	[3263]	3727	3885	4176	4446	3919	4743	4252	[4551]	5358
25	2660	[3129]	3304	3650	3990	4119	4949	[4362]	4257	3573	4780	5405
26	2733	3294	3412	2614	[3858]	4441	4252	4438	3861	3536	5008	5453
27	2764	3140	3473	2488	3919	4403	4648	4095	3609	[4052]	5394	5562
28	[2672]	2822	3090	[2951]	4017	5097	[4634]	4337	4011	3997	5068	5055
29	2465	2580	2030	3161	3920	5025	4312	4586	[3763]	4357	5138	[4829]
30	2825		−0091	2953	3906	[4686]	4407	3921	3984	4598	5173	3923
31	2583		[1911]		4414		5233	3692		4777		4502
Mean	2663	2845	2661	2976	3679	4425	4584	4376	4360	4344	4740	5212

Table XXII. has been formed from the daily means in scale divisions by the following formula :—

$$f=(n-500)\ 0{\cdot}000140,$$

where f is the mean in the Table, n is the mean in scale divisions, 500 scale divisions being taken as the zero; the corresponding zero for the same adjustment in the end of 1843 was 484·93; in order, therefore, to render the means for 1844 comparable with those for 1843, $15{\cdot}07 \times 0{\cdot}00014 = 0{\cdot}002110$ must be added to the former, 0·001000 being subtracted from the latter, and the differences multiplied by 1·316. See *Introduction, Bifilar Magnetometer.*

The mean value of the horizontal component from Table XXII. = 0·003605.

Secular Change.—When the monthly means at the foot of Table XXII., and the monthly means for 1843 (as corrected, p. 231, line 6, 1843), are rendered comparable, as indicated after Table XXII., we have the following monthly means for the two years, with the corresponding secular changes :—

		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1844,	0·00	4773	4955	4771	5086	5789	6535	6694	6486	6470	6454	6850	7322
1843,	0·00	0932	0917	0661	0903	1848	2328	2214	2307	2690	2903	3664	4183
Secular change,	+0·00	3841	4038	4110	4183	3941	4207	4480	4179	3780	3551	3186	3139

The value of the secular change, as deduced from the monthly comparisons, does not vary greatly till October, after which it diminishes considerably.

The mean secular change corresponding to 1st July 1843, till 1st July 1844, . = +0·003886

A comparison of the mean value of the component for 1844, with that for 1845, shews that the amount of the secular change has continued to diminish, the mean corresponding to 1st July 1844, till 1st July 1845, being only +0·001436. As it is desirable, in some case, to eliminate the secular change in order to exhibit other laws with more distinctness, the mean of these two determinations has been taken as the secular change for 1844, or,

The mean secular change corresponding to 1st January 1844, till 1st January 1845, . = +0·002661

This quantity is nearly the same as that obtained from a comparison of November and December 1843, January and February 1844 with November and December 1844, January and February 1845.

Annual Period.—From the means at the foot of Table XXII., the horizontal component does not vary greatly in value from January till April, but it increases rapidly from April till June, after which it is nearly constant again till October, increasing again in November and December. It appears, therefore, that the secular increase is neutralized for three months after the solstices, and augmented in the three months after the equinoxes. In order to shew the law of the annual variation independent of the secular change, the latter has been eliminated from the means at the foot of Table XXII. by the application of the correction $-n\ 0{\cdot}000222$, where n is the number of the month after January: the means, thus corrected, are—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·00	2663	2623	2217	2310	2791	3315	3252	2822	2584	2346	2520	2770

These means exhibit the law already concluded from the observations for 1842 and 1843—namely, that the *horizontal component is a minimum near the equinoxes, and a maximum near the solstices.* The secular increase is diminishing in value, and therefore the application of a constant correction from month to month cannot be quite accurate; any other mode of elimination, however, could only have affected the values of the maxima and minima; the epochs would remain as stated above.

It should be remarked, with respect to this law, that the variations of the magnetic dip are best represented in this latitude by the bifilar magnetometer: this is not the case, however, in low latitudes; in these, the variations of intensity are best represented in the horizontal component; if, therefore, the magnetic dip and magnetic intensity have each an equally well-marked annual period with different epochs, the same

instrument will indicate a different law in high and low latitudes.* See the discussion for the effect of disturbances on the monthly means for other considerations affecting the annual variation.

Differences of the Daily Means from the Monthly Means.—The following are the average differences of the daily means from their corresponding monthly means :—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·000	191	356	548	436	342	185	241	366	278	476	323	318

The daily means, therefore, differ least from the monthly means near the solstices, and most near the equinoxes, the average difference for the latter being nearly three times that for the former. As in the case of the similar discussion for the declination, this law is also related to the annual period, and may be similarly generalized. The average difference of the daily mean from the monthly mean is a minimum when the horizontal component is a maximum, and *vice versa*. This correspondence is the more remarkable, since the epochs for the greatest and least average differences are not the same for the magnetic declination and horizontal component.

The following are the averages of the positive and of the negative differences :—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
+0·000	172	317	445	404	355	193	217	353	248	459	280	258
−0·000	215	404	712	472	330	178	271	380	316	494	382	413

The negative departures from the monthly means are greatest; in only two months, May and June, are the positive differences of a greater value than the negative differences.

TABLE XXIII.—Mean Variations of the Horizontal Component of Magnetic Force, after eliminating the Secular Change, with reference to the Moon's Age, Declination, and Distance from the Earth, for 1844.

Moon's Age.	Variation of Horizontal Component.	Moon's Age.	Variation of Horizontal Component.	After Moon farthest North.	Variation of Horizontal Component.	After Moon farthest North.	Variation of Horizontal Component.	Before and after Perigee.	Variation of Horizontal Component.	Before and after Apogee.	Variation of Horizontal Component.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	0133	0	0607	0	0499	14	0450	7	0242	7	0283
16	0172	1	0486	1	0484	15	0510	6	0164	6	0314
17	0036	2	0546	2	0589	16	0522	5	0000	5	0123
18	0120	3	0520	3	0408	17	0449	4	0131	4	0052
19	0000	4	0608	4	0259	18	0393	3	0188	3	0092
20	0203	5	0572	5	0057	19	0339	2	0206	2	0065
21	0285	6	0489	6	0148	20	0333	1	0202	1	0079
22	0320	7	0506	7	0175	21	0151	P	0341	A	0164
23	0301	8	0510	8	0255	22	0200	1	0366	1	0280
24	0452	9	0235	9	0259	23	0210	2	0305	2	0455
25	0526	10	0067	10	0245	24	0000	3	0271	3	0473
26	0492	11	0130	11	0436	25	0199	4	0383	4	0457
27	0606	12	0008	12	0387	26	0129	5	0365	5	0433
28	0550	13	0119	13	0471	27	0339	6	0439	6	0218
29	0600	14	0028					7	0203	7	0070

This Table has been formed in the same manner as Table II., the rate of secular change employed being $= +0·002661$ *per annum*, or $= +0·0000073$ *per diem*.

* The law for the annual period of the horizontal component has been confirmed by the discussions of the observations at Makerstoun for *each* of the years 1842, 1843, 1844, and 1845; it has also been confirmed by a discussion of the observations made at Toronto in 1842 (see Transactions of the Royal Society of Edinburgh, Vol. xvi., pp. 102–103). Dr LAMONT has not been able to conclude any distinct law from the observations made at Munich (Resultate des magnetischen Observatoriums in München, 1843—1845, p. 28); this, it appears to me, is due to the mode of discussion adopted. Dr LAMONT combines the monthly means into quarterly periods, January, February, and March being the first, a mode of combination the best fitted to disguise the law, since each period includes the whole range of the variations. Neglecting the means of the Munich Observations for 1842, which were broken up in May by

Variation of the Horizontal Component with reference to the Moon's Age.—This law is very distinctly marked in the means given in Table XXIII. The *horizontal component of magnetic force is a minimum at opposition, and a maximum at conjunction.* This will be more evident from the following means of groups :—

14 days to 16 days, Full Moon,	0·000111	29 days to 1 day, New Moon,	0·000564
17 ...... 20 ...	0·000090	2 ...... 5 ...	0·000561
21 ...... 24 ...	0·000339	6 ...... 9 ...	0·000435
25 ...... 28 ...	0·000543	10 ...... 13 ...	0·000081

An examination of the daily means of the horizontal component shews, that this law is indicated with great distinctness in seven or eight lunations of 1844,—namely, in the lunations between January 5 and April 3, and between August 2 and December 20. The law is distorted or exaggerated in some lunations by the larger disturbances. In all probability, the mean range is exaggerated by the larger negative disturbances which appear to have occurred about full Moon in 1844.

Variations of the Horizontal Component with reference to the Moon's Declination.—This law is also well marked in the means in Table XXIII. The horizontal component is a maximum when the moon has its greatest north, and also its greatest south declination; and it is a minimum between these epochs, when the moon is rather north of the equator. The following are means of groups :—

27 days to 1 day, Moon farthest north,	0·000441	13 days to 15 days, Moon farthest south,	0·000477
2 ...... 5 days	0·000328	16 ...... 19 ...	0·000426
6 ...... 8 ...	0·000193	20 ...... 22 ...	0·000228
9 ...... 12 ...	0·000332	23 ...... 26 ...	0·000134

This law corresponds with that of the annual period, and may be stated, generally, as follows :—The horizontal component is a maximum when the sun or moon has its greatest north and south declination, and it is a minimum between these epochs, when the sun or moon is near the equator.

Annual Variation of the Diurnal Ranges of the Horizontal Component.—The following are the monthly means of the diurnal ranges :—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·00	1920	2750	4980	4990	4510	3710	4290	4600	4020	3690	3140	2510

The diurnal range is therefore a minimum in January, a secondary minimum in June, a maximum in April, and in August; or generally, it is a minimum near the solstices, and a maximum immediately after the vernal and before the autumnal equinox. In the annual variations, therefore, it appears that when the horizontal component is a maximum, the diurnal range is a minimum, and *vice versa.*

The mean of the diurnal ranges for the year = 0·003760.

When the means of the diurnal ranges are compared with the ranges of the mean diurnal variations (see p. 363), we obtain the following excesses of the former compared with the latter :—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·00	1230	1675	2785	1612	0866	0531	0633	1099	1074	1377	1835	1750

Whence it appears, that the causes which render the mean diurnal range greater than the range of the mean diurnal variation, have their minimum effect in June, a secondary minimum being in January; their maximum in March, and a secondary maximum in November. This is the same result as that already obtained for the magnetic declination.

some instrumental causes, and considering the means for the last three years, commencing December 1842, we have the following quantities (Resultate, p. 77) :—

	Dec.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1·93	657	633	637	663	653	750	760	783	770	677	710	780

These means include the secular change, and they follow nearly the same law of variation as the means at the foot of Table XXII.; in fact, an examination of the above quantities will shew that any elimination of secular change which is near the truth will give the law as already stated. Taking the mean secular change from 1843—1845 = 0·0018 a-year (Resultate, p. 27), and reducing the values to December at the rate of 0·00015 a-month, we obtain the following means :—

	Dec.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.
1·93	657	618	607	618	593	675	670	678	650	542	560	615

These appear to give a sufficiently distinct result; the horizontal component is a maximum in December and in June (May, June, and July having nearly the same value), and it is a minimum in April, and a principal minimum in September. This seems nearer to the results of the Makerstoun Observations than could be hoped for, when we consider the difference of instruments (Dr LAMONT's having a unifilar, and the Makerstoun instrument having a bifilar suspension), and the consequent liabilities to different kinds of instrumental error.

TABLE XXIV.—Diurnal Range of the Horizontal Component of Magnetic Force for each Civil Day, as deduced from the Hourly Observations, with the Mean for each Week in 1844.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0	0·0
1	0214	0605	0213	0476	0651	0374	0405	0788	[0468]	1273	0266	[0220]
2	0323	0707	0650	0498	0526	[0347]	0335	0692	0414	0332	0319	0144
3	0262	0423	[0517]	0834	0554	0350	0361	0521	0372	0290	[0251]	0162
4	0221	[0511]	0426	0372	0396	0260	0347	[0494]	0412	0293	0224	0330
5	0330	0318	0745	0244	[0469]	0417	0350	0395	0260	0238	0144	0231
6	0529	0679	0645	0427	0350	0360	0424	0354	0342	[0288]	0228	0179
7	[0269]	0337	1037	[0349]	0336	0307	[0442]	0214	0423	0262	0151	0105
8	0143	0245	0518	0315	0654	0396	0694	0276	[0325]	0448	0213	[0150]
9	0176	0210	0582	0353	0444	[0364]	0494	0879	0329	0204	0186	0109
10	0210	0213	[0496]	0381	0297	0428	0343	0606	0253	0211	[0210]	0157
11	0204	[0181]	0230	0224	0364	0402	0430	[0423]	0343	0245	0314	0120
12	0230	0141	0344	0214	[0421]	0291	0403	0323	0325	0256	0244	0105
13	0091	0168	0260	0230	0326	0288	0364	0213	0384	[0230]	0154	0123
14	[0157]	0104	0297	[0517]	0459	0245	[0433]	0239	0419	0214	0210	0421
15	0123	0155	0150	0343	0640	0400	0489	0351	[0375]	0192	0169	[0238]
16	0148	0123	0199	0197	0400	[0377]	0399	0484	0344	0256	1400	0431
17	0141	0322	[0315]	1894	0295	0440	0510	0482	0399	0244	[0463]	0105
18	0102	[0158]	0311	0725	0361	0554	0454	[0407]	0382	0256	0416	0244
19	0126	0115	0715	0392	[0381]	0329	0518	0347	0385	0304	0400	0326
20	0087	0099	0223	0342	0295	0469	0389	0399	0606	[0441]	0186	0636
21	[0123]	0139	0238	[0420]	0392	0448	[0367]	0385	0330	1334	0179	0343
22	0186	0245	0297	0351	0538	0270	0321	0521	[0379]	0256	1008	[0279]
23	0134	0088	0325	0347	0889	[0363]	0227	0927	0447	0252	0599	0130
24	0105	0123	[0269]	0361	0546	0284	0294	0384	0238	0195	[0378]	0111
25	0263	[0225]	0259	0848	0491	0314	0399	[0479]	0269	0402	0192	0130
26	0136	0122	0263	0847	[0538]	0388	0486	0316	0806	0931	0113	0228
27	0190	0154	0228	0903	0511	0307	0601	0350	0750	[0381]	0178	0204
28	[0183]	0617	0417	[0683]	0421	0367	[0504]	0379	0242	0284	0385	0281
29	0140	0424	1162	0440	0368	0588	0428	0455	[0662]	0221	0188	[0342]
30	0195		2212	0409	0336	[0393]	0427	0638	0568	0252	0109	0769
31	0181		[0934]		0350		0682	0515		0325		0413

TABLE XXV.—Means of the Diurnal Ranges of the Horizontal Component of Magnetic Force, with reference to the Moon's Age, Declination, and Distance from the Earth, for 1844.

Moon's Age.	Mean Range.	Moon's Age.	Mean Range.	After Moon farthest North.	Mean Range.	After Moon farthest North.	Mean Range.	Before and after Perigee.	Mean Range.	Before and after Apogee.	Mean Range.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	4690	0	3982	0	3315	14	3644	7	4414	7	3871
16	4760	1	3587	1	3392	15	3136	6	3956	6	3112
17	4498	2	3149	2	3838	16	2925	5	5836	5	3846
18	4699	3	2761	3	4001	17	3800	4	3973	4	3995
19	4325	4	3126	4	4738	18	3517	3	3544	3	4338
20	3420	5	3197	5	5348	19	3944	2	3409	2	5376
21	3514	6	4326	6	4292	20	3682	1	3818	1	3774
22	3253	7	3442	7	4248	21	3962	P	3733	A	3464
23	2915	8	3647	8	3804	22	3402	1	3673	1	2564
24	2827	9	4083	9	4109	23	5391	2	3651	2	3268
25	3275	10	4987	10	3222	24	4894	3	3138	3	3297
26	2847	11	4729	11	3047	25	3423	4	2948	4	3260
27	2722	12	5449	12	3226	26	3538	5	4159	5	3710
28	2900	13	4765	13	2963	27	3095	6	3694	6	4392
29	2738	14	4681					7	3953	7	4843

Table XXV. has been formed from Table XXIV. in the manner described for Table II.

Variations of the Diurnal Ranges of the Horizontal Component, with reference to the Moon's Age.—The means in the first portion of Table XXV. shew that *the diurnal range of the horizontal component is a minimum about conjunction, and a maximum about opposition.* The same result has already been obtained for the magnetic declination. The following are means of groups :—

14 days to 16 days, Full Moon,	0·004710	29 days to 1 day, New Moon,	0·003436
17 ...... 20 ...	0·004235	2 ...... 5 ...	0·003058
21 ...... 24 ...	0·003127	6 ...... 9 ...	0·003874
25 ...... 28 ...	0·002936	10 ...... 13 ...	0·004982

There is the appearance of a secondary maximum at new moon. The remarks already made in the case of the magnetic declination, Table IV., are equally applicable here. In the case of this period, as well as that for the year, it appears that the diurnal range is a maximum when the horizontal component is a minimum, and *vice versa.*

Variations of the Diurnal Range of the Horizontal Component with reference to the Moon's Declination.—From the second portion of Table XXV., the diurnal range is a minimum when the moon has its greatest south and also its greatest north declination, and it is a maximum when the moon is near to, but north of, the equator. This result is also the same as that obtained for the magnetic declination. The following are means of groups :—

27 days to 1 day, Moon farthest north,	0·003267	13 days to 15 days, Moon farthest south,	0·003248
2 ...... 5 days,	0·004481	16 ...... 19 ...	0·003546
6 ...... 8 ...	0·004115	20 ...... 22 ...	0·003682
9 ...... 12 ...	0·003401	23 ...... 26 ...	0·004311

Here, also, as for the magnetic declination, we can say generally, that the diurnal range of the horizontal component of magnetic force is less when the sun or moon has its greatest north or south declination, than at the intermediate periods. In this case, also, the diurnal range is a maximum when the horizontal component is a minimum, and *vice versa.*

TABLE XXVI.—Hourly Means of the Scale Readings of the Bifilar Magnetometer, corrected for Temperature, 1844.

Mean Time. Gott.	Mean Time. Mak.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	h.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.
13	12	517·59	520·39	518·79	521·08	525·54	532·85	534·32	532·16	532·56	532·23	532·60	535·72	527·99
14	13	517·59	518·69	513·74	522·56	525·33	531·84	533·56	530·62	532·84	531·60	532·67	536·74	527·31
15	14	517·03	517·96	514·61	520·81	524·28	531·11	532·59	530·28	530·93	531·39	532·40	535·40	526·57
16	15	518·27	518·64	516·98	518·00	523·13	530·63	531·69	529·88	532·19	533·34	534·19	535·96	526·91
17	16	519·45	518·75	518·29	520·12	521·86	529·43	530·93	530·21	532·28	532·76	535·28	538·06	527·28
18	17	520·80	522·22	516·59	521·47	523·46	529·12	530·11	528·06	533·18	531·97	535·75	539·08	527·65
19	18	520·84	521·26	521·33	520·48	522·42	526·47	529·16	527·62	530·85	531·36	537·27	540·01	527·42
20	19	520·84	521·30	519·37	517·03	520·35	524·81	526·24	523·58	526·34	530·70	536·49	540·08	525·59
21	20	519·66	521·41	515·05	511·67	516·42	521·32	523·01	518·53	523·68	525·59	535·15	538·33	522·48
22	21	518·65	519·40	511·93	508·25	514·63	518·94	519·07	517·50	519·73	521·41	530·97	536·52	519·75
23	22	516·40	518·02	510·39	508·71	513·87	518·95	518·18	517·90	516·92	519·48	528·63	534·65	518·51
0	23	516·72	517·12	512·27	509·82	516·35	521·94	521·54	522·34	521·01	523·26	528·76	534·92	520·50
1	0	317·76	519·05	514·50	516·48	521·60	527·21	527·27	526·45	524·99	527·69	533·28	536·22	524·37
2	1	519·96	521·56	520·62	520·15	524·64	531·16	532·41	532·67	530·84	531·10	533·53	536·86	527·96
3	2	521·33	523·37	521·54	523·81	528·62	535·35	536·26	536·19	533·52	532·78	535·02	537·86	530·47
4	3	520·09	522·83	524·66	526·40	530·02	537·00	538·78	538·87	531·35	535·58	535·30	538·23	531·84
5	4	521·11	522·16	525·78	527·64	536·66	539·09	540·32	538·67	537·98	535·58	534·13	538·19	533·11
6	5	520·33	521·10	526·07	532·38	538·35	540·80	541·62	542·51	536·70	536·00	537·95	537·88	534·31
7	6	519·15	521·38	523·32	531·59	539·90	541·33	544·30	541·47	536·84	534·29	537·06	537·94	534·05
8	7	517·77	521·03	526·05	528·53	538·54	541·65	544·08	541·04	536·77	533·72	534·13	537·46	533·40
9	8	519·45	522·08	525·64	527·72	535·35	539·77	540·39	539·38	536·23	534·00	534·91	539·07	532·83
10	9	518·70	521·35	519·38	525·22	532·11	537·73	538·07	536·01	536·34	533·07	532·69	536·33	530·58
11	10	518·48	518·61	518·08	526·81	530·23	536·47	536·68	535·99	535·52	533·72	532·85	535·64	529·93
12	11	518·53	518·08	521·29	523·55	527·12	533·66	535·27	532·22	534·73	532·08	531·66	536·32	528·71

The true mean time at Makerstoun is 10^m in advance of the hours given in the second column of Table XXVI.

TABLE XXVII.—Diurnal Variations of the Horizontal Component of Magnetic Force in 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12	0167	0458	1176	1796	1634	1947	2260	2052	2190	1785	0556	0150	1327
13	0167	0220	0469	2003	1604	1806	2153	1837	2229	1697	0566	0293	1233
14	0088	0118	0591	1758	1457	1704	2017	1789	1961	1667	0528	0105	1128
15	0262	0213	0923	1365	1296	1637	1891	1733	2138	1940	0778	0183	1176
16	0427	0228	1106	1662	1119	1469	1785	1779	2150	1859	0931	0477	1229
17	0616	0714	0868	1851	1343	1425	1670	1478	2276	1749	0997	0620	1280
18	0622	0580	1532	1712	1197	1054	1537	1417	1950	1663	1210	0750	1248
19	0622	0585	1257	1229	0907	0822	1126	0851	1319	1571	1100	0760	0992
20	0456	0601	0652	0479	0367	0333	0676	0144	0946	0855	0913	0515	0557
21	0315	0319	0216	0000	0106	0000	0125	0000	0393	0270	0328	0262	0174
22	0000	0126	0000	0064	0000	0001	0000	0056	0000	0000	0000	0000	0000
23	0045	0000	0263	0220	0347	0420	0470	0678	0573	0529	0018	0038	0279
0	0190	0270	0575	1152	1082	1158	1273	1253	1130	1149	0651	0220	0821
1	0498	0622	1432	1666	1508	1711	1992	2124	1949	1627	0686	0309	1323
2	0690	0875	1561	2178	2065	2297	2531	2617	2324	1862	0895	0449	1675
3	0517	0799	1998	2541	2261	2528	2884	2992	2440	2254	0934	0501	1867
4	0659	0706	2155	2715	3191	2821	3100	2964	2948	2254	0770	0496	2044
5	0550	0557	2195	3378	3427	3060	3282	3501	2769	2313	1305	0452	2212
6	0385	0596	1810	3268	3644	3135	3657	3356	2789	2073	1180	0461	2176
7	0192	0547	2192	2839	3454	3179	3626	3296	2779	1994	0770	0393	2084
8	0427	0694	2135	2726	3007	2916	3109	3063	2703	2033	0879	0619	2005
9	0322	0592	1259	2376	2554	2631	2785	2591	2719	1903	0568	0235	1691
10	0291	0213	1077	2598	2290	2454	2590	2589	2604	1994	0591	0139	1599
11	0298	0134	1526	2142	1855	2061	2393	2061	2493	1764	0424	0234	1428

Diurnal Variation of the Horizontal Component.—The following is the mean result for the year 1844:—The horizontal component is a minimum at $10^h\ 10^m$ A.M., after which hour it increases with its greatest rapidity, attaining its principal maximum at $5^h\ 30^m$ P.M.; it then begins to diminish, and continues to do so with considerable regularity till $2^h\ 10^m$ A.M., when there is a secondary minimum; it again increases slightly, and becomes a secondary maximum at $5^h\ 30^m$ A.M., after which it diminishes with its greatest rapidity to the principal minimum at $10^h\ 10^m$ A.M. The range of the mean diurnal variation is rather more than two thousandths of the whole horizontal component (0·0022). An examination of the monthly means will shew, that the two maxima and the two minima are each of nearly equal value in the winter months, the morning maximum being the principal maximum in the month of December; in the summer months, on the contrary, the secondary maximum and minimum nearly or altogether disappear. There are several irregularities, especially in the autumnal and winter months, which are evidently due to disturbances. The following are the approximate times of the principal minimum (−) and maximum (+), and of the secondary minimum and maximum:—

		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
−Min.	A.M.	$10^h 20^m$	$11^h 0^m$	$10^h 10^m$	$9^h 30^m$	$10^h 10^m$	$9^h 40^m$	$10^h 0^m$	$9^h 30^m$	$10^h 10^m$	$9^h 50^m$	$10^h 30^m$	$10^h 30^m$
+Max.	P.M.	3·10	2·10	6·10	5·20	6·10	7·0	6·40	5·10	4·10	5·0	5·10	3·20
Min.	A.M.	2	1	1	3	4	...	...	3	2	1·30	11 P.M.	1 A.M.
Max.	A.M.	6·10	6	6	5	5	...	...	4	5	3	6·10	6·40

On the whole, it appears that the principal minimum occurs rather earlier in the day in the summer months than in the winter months, and that the principal or afternoon maximum occurs rather later in the day in the former than in the latter.

In order to examine the diurnal variation when freed, as far as possible, from the effects of irregular causes, the hourly observations on the days previously selected, Table VII., have been used. The following Tables contain diurnal variations for the ten days and for the five days in each month least affected by disturbances.

TABLE XXVIII.—Hourly Means of the Bifilar Magnetometer Scale Readings for the Ten Days least disturbed in each Month of 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.
12	17·70	19·91	19·01	22·73	27·77	32·55	33·74	32·00	33·68	32·20	33·63	37·15	528·51
13	16·88	19·90	19·47	22·63	26·65	31·93	33·50	32·61	33·37	31·31	32·68	36·37	528·11
14	16·98	19·06	18·47	22·13	26·06	31·24	33·05	31·42	32·89	31·59	34·08	36·13	527·76
15	18·51	19·18	18·52	20·99	24·36	30·80	32·26	31·55	31·77	31·65	33·74	37·07	527·53
16	19·52	19·45	18·74	20·81	23·61	31·05	31·25	30·88	31·34	32·17	35·39	38·12	527·69
17	19·88	20·17	19·51	21·63	23·31	30·40	31·37	29·74	31·14	32·30	35·62	39·21	527·86
18	19·78	19·93	20·36	20·79	21·75	28·26	29·24	28·53	28·24	31·70	36·20	39·89	527·06
19	20·07	20·66	18·77	19·17	20·29	26·25	26·70	24·84	26·26	31·25	35·37	39·02	525·72
20	19·09	20·37	15·78	15·43	17·33	22·56	23·54	20·33	19·98	26·96	34·24	37·34	522·75
21	17·85	19·20	11·74	11·61	14·92	20·28	20·48	18·52	17·62	23·22	30·22	35·86	520·13
22	16·80	17·94	10·16	9·10	14·58	19·76	19·04	18·66	16·98	20·95	29·03	34·06	518·91
23	16·23	18·50	11·10	10·06	16·52	22·82	20·95	22·63	22·11	23·35	29·14	33·79	520·60
0	18·59	19·94	12·89	13·64	20·97	25·83	25·53	26·83	24·67	25·61	31·24	34·85	523·38
1	21·62	20·67	18·35	17·01	25·42	30·39	31·97	31·64	31·66	28·92	32·81	36·67	527·26
2	21·63	22·06	20·27	19·71	26·92	33·85	36·45	34·14	33·30	32·00	33·89	37·98	529·35
3	20·96	21·50	21·94	25·33	30·03	35·30	39·25	35·75	35·08	32·92	35·14	37·20	530·87
4	19·99	19·80	22·13	23·86	32·59	38·19	38·99	34·84	37·15	33·56	36·22	38·94	531·35
5	20·42	20·93	21·01	27·88	36·06	40·33	41·58	38·40	34·37	34·19	36·43	39·51	532·59
6	20·02	22·46	22·95	28·18	37·30	40·26	42·73	37·69	37·72	35·24	35·94	38·26	533·23
7	19·54	21·80	22·82	29·53	36·82	40·69	42·77	38·68	38·33	35·18	34·88	38·24	533·27
8	18·62	21·92	23·95	28·24	34·13	38·91	40·49	39·31	38·43	34·71	34·55	37·42	532·56
9	18·60	20·93	22·40	27·03	32·33	36·98	38·74	38·20	37·71	35·98	34·49	36·28	531·64
10	18·48	20·57	23·66	27·55	30·98	35·76	36·62	36·90	36·85	34·06	34·87	36·81	531·09
11	18·79	20·98	22·42	25·34	30·21	34·15	35·67	35·94	36·68	33·61	33·07	37·22	530·34

TABLE XXIX.—Hourly Means of the Bifilar Scale Readings for the Five Days least disturbed in each Month of 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.
12	17·62	19·73	21·87	24·15	27·38	33·52	34·79	33·27	34·49	32·11	33·28	36·93	529·09
13	17·76	19·49	21·39	23·33	26·86	32·02	34·47	33·09	33·71	32·77	32·18	36·79	528·65
14	17·36	18·11	20·55	22·59	25·82	31·82	34·01	31·93	33·11	31·19	34·78	37·03	528·19
15	19·12	18·65	19·95	21·69	24·06	31·28	33·21	31·31	32·27	31·97	33·38	37·41	527·86
16	18·94	18·43	20·19	20·77	23·04	31·14	32·11	31·41	31·63	32·15	35·16	38·19	527·76
17	19·38	19·73	20·21	22·09	22·58	31·46	31·73	30·27	30·49	31·79	35·52	38·99	527·85
18	19·16	19·51	20·93	21·59	20·64	29·54	29·59	28·49	28·05	30·73	36·54	38·83	526·97
19	19·24	19·97	19·41	19·37	20·02	27·74	27·53	24·37	25·25	30·49	36·50	38·49	525·70
20	18·98	19·85	16·29	15·63	16·88	23·08	25·33	19·49	19·03	26·67	33·90	36·59	522·64
21	17·28	19·69	11·53	12·17	15·44	20·26	21·87	17·93	18·07	22·61	29·72	34·77	520·11
22	17·00	18·45	9·03	9·17	15·70	19·18	19·39	18·63	18·29	20·87	28·50	33·77	519·00
23	16·76	20·01	9·89	10·17	16·20	20·68	19·65	23·11	21·85	21·83	28·10	33·17	520·12
0	18·90	20·51	11·53	13·39	20·20	23·42	25·05	27·95	27·89	24·99	31·14	33·93	523·24
1	21·24	21·95	16·57	15·85	25·28	29·30	31·47	32·07	31·85	29·03	32·80	37·25	527·05
2	21·12	21·81	17·95	19·55	29·00	33·66	34·11	34·17	34·75	31·69	33·74	38·75	529·19
3	20·56	21·13	18·95	24·29	30·64	35·30	38·83	35·23	35·37	33·19	35·14	36·71	530·44
4	20·52	19·87	20·27	22·79	33·24	39·12	37·23	33·35	35·45	34·05	36·00	39·75	530·97
5	20·62	20·55	21·33	27·99	35·14	40·32	41·63	38·77	34·11	34·99	36·12	40·01	532·63
6	19·88	21·83	22·95	27·75	37·90	40·84	41·83	38·13	37·23	35·65	35·26	37·87	533·09
7	20·34	22·11	23·21	28·73	36·06	40·26	42·17	38·61	37·19	35·17	34·64	38·79	533·11
8	19·86	22·47	24·13	28·31	33·34	39·30	40·03	39·35	37·31	34·97	34·86	38·25	532·68
9	18·16	22·37	23·11	27·17	32·86	36·08	38·51	38·25	36·89	37·41	35·82	36·71	531·94
10	18·06	20·81	22·61	26·71	31·02	35·44	36·07	36·57	35·85	35·57	35·38	36·81	530·91
11	18·74	20·83	22·45	25·17	31·52	33·92	35·29	34·23	37·27	32·77	34·24	37·71	530·34

Considering, first, the mean for the sixty days—being the mean for the year—we find that the minimum of the horizontal component occurs, as before, at 10^h 10^m A.M.; the maximum occurs at 6^h 40^m P.M., being fully an hour after the epoch for the whole observations, and the secondary minimum is almost entirely obliterated. The same epochs are obtained from the mean for the 120 days; in this case, however, the secondary minimum is better marked. The secondary minimum and maximum are distinctly marked in the mean of the whole observations; they are still existent in the mean for the 120 days least disturbed, and scarcely evident in the mean of the 60 days least disturbed; in a more careful selection, therefore, it is probable that they would wholly disappear. This case is completely similar to that for the secondary maximum of the magnetic declination; and in this case, also, there is still a marked inflexion, which, however, can be at once traced to the duplicate form of the diurnal variation in the winter months. The following Table contains the approximate times of maximum and minimum for each month.

TABLE XXX.—Epochs of Maxima and Minima of the Horizontal Component of Magnetic Force, obtained from the Ten-Day and Five-Day series of observations, for each Month of 1844.

Month.	10 Days.				5 Days.			
	− Min.	+ Max.	Min.	Max.	− Min.	+ Max.	Min.	Max.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
January	11·10 A.M.	1·40 P.M.	1·30 A.M.	7·10 A.M.	11·10 A.M.	1·30 P.M.	2·0 A.M.	6·10 A.M.
February	10·10 ...	2·10 ... / 6·10 ...	2·30 ...	7·30 ...	10·10 ...	1·30 ... / 8·10 ...	2·10 ...	7·10 ...
March	10·10 ...	8·10 ...	2·40 ...	6·10 ...	10·10 ...	8·10 ...	3·10 ...	6·10 ...
April	10·10 ...	7·10 ...	3·40 ? ...	5·10 ? ...	10·10 ...	7·10 ...	4·10 ? ...	5·10 ? ...
May	9·50 ...	6·10 ...	......	......	9·20 ...	6·10 ...	......	......
June	10·0 ...	6·30 ...	3·10 ? ...	4·10 ? ...	10·10 ...	6·10 ...	3·50 ? ...	5·10 ? ...
July	10·10 ...	6·40 ...	......	......	10·30 ...	7·10 ...	......	......
August	9·40 ...	8·10 ...	......	......	9·10 ...	8·10 ...	......	......
September	10·0 ...	7·40 ...	......	......	9·30 ...	8· ...	......	......
October	10·10 ...	8· ...	1·30 ...	5·10 ...	10·10 ...	9·10 ...	2·10 ...	4·10 ...
November	10·30 ...	5·10 ...	1·10 ...	6·10 ...	11·0 ...	5·10 ... / 9·10 ...	1·10 ...	6·40 ...
December	11·0 ...	5·10 ...	1·40 ...	6·10 ...	11·10 ...	5·0 ...	12· ? ...	5·40 ...

From both series, the principal minimum occurs latest in the winter months, and perhaps earlier near the equinoxes than at the summer solstice; the principal maximum occurs earliest near the winter solstice, and about two hours later near the equinoxes than at the summer solstice.

On the whole, the principal maximum occurs earlier in the mean for the whole series, than in the means for the selected series—the effect of disturbances, therefore, being to accelerate the epoch of maximum. In all the three series there appear to be three maxima and three minima in the month of February, and these are most distinctly marked in the least disturbed,—the five-day series. These, and other more minute characteristics, will be better considered in connection with the discussion of the succeeding year's observations.

Intermittent disturbances seem to have less effect on the form of the diurnal variation of the horizontal component (and therefore, probably, the dip), than on the form of the variation for any of the other elements discussed.

Ranges of the Mean Diurnal Variation.—The following are the ranges of the monthly mean diurnal variation, as deduced from all the hourly observations, and from the hourly observations in the ten days and in the five days, selected as least affected by disturbances:—

		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
All,......	0·00	0690	0875	2195	3378	3644	3179	3657	3501	2948	2313	1305	0760
10 days,	0·00	0756	0633	1931	2860	3181	2930	3322	2911	3003	2104	1036	0854
5 days,	0·00	0627	0610	2114	2738	3144	3032	3189	2999	2694	2316	1182	0958

The ranges for the months for which the sun is north of the equator, differ little from each other, and the difference is least marked in the selected series. In the mean of all, January has the least range; but the means for the selected series give February the least; in all cases, the range for June is less than for the immediately preceding and succeeding months; but this difference is least evident in the series free from disturbances.

TABLE XXXI.—Mean Variations of the Horizontal Component of Magnetic Force, with reference to the Moon's Hour-Angle for each Lunation, for the Six Summer and Six Winter Lunations, and for the Twelve Lunations of 1844.

Moon's Hour-Angle.	Lunations.														
	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.	12th.	Winter.	Summer.	Year.
h.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0 00
0	0000	0118	0384	0967	0371	0321	0161	0337	0232	0549	0318	0153	0045	0231	0049
1	0266	0302	0276	0385	0468	0294	0160	0389	0228	0573	0272	0098	0090	0153	0033
2	0325	0181	0000	0557	0507	0461	0283	0216	0104	0532	0127	0084	0000	0187	0005
3	0553	0182	0202	0428	0314	0368	0218	0291	0172	0428	0007	0351	0079	0131	0016
4	0433	0225	0771	0557	0417	0421	0189	0175	0288	0466	0000	0389	0172	0174	0084
5	0521	0123	0039	0759	0363	0329	0106	0000	0280	0372	0158	0356	0053	0139	0007
6	0465	0129	0428	0370	0347	0400	0235	0109	0139	0302	0392	0351	0136	0099	0029
7	0526	0221	0622	0365	0346	0246	0196	0204	0371	0207	0122	0242	0115	0121	0029
8	0322	0048	1014	0000	0052	0531	0171	0162	0160	0566	0371	0356	0238	0012	0036
9	0297	0195	0283	0032	0284	0483	0364	0351	0351	0435	0269	0449	0113	0144	0040
10	0375	0238	0734	0279	0291	0277	0416	0389	0025	0000	0293	0427	0136	0112	0036
11	0135	0113	0575	0011	0420	0385	0491	0368	0169	0154	0441	0365	0135	0140	0051
12	0605	0235	0847	0039	0000	0382	0392	0648	0491	0896	0287	0325	0324	0158	0152
13	0515	0111	0636	0105	0456	0405	0587	0244	0655	0966	0357	0244	0263	0291	0189
14	0528	0178	0958	0577	0307	0461	0265	1086	0650	0559	0448	0295	0286	0390	0250
15	0367	0140	1224	0438	0069	0402	0374	0430	0498	0396	0260	0385	0254	0201	0139
16	0526	0230	0669	0546	0234	0203	0307	0494	0391	0276	0329	0228	0168	0195	0093
17	0386	0395	0568	0606	0032	0202	0154	0356	0501	0386	0182	0361	0171	0141	0068
18	0370	0242	0407	0361	0115	0122	0074	0202	0486	0538	0386	0344	0173	0059	0027
19	0413	0329	0874	0501	0350	0000	0161	0270	0385	0645	0503	0498	0335	0111	0134
20	0552	0312	0694	0426	0370	0092	0000	0108	0007	0335	0407	0115	0194	0000	0008
21	0396	0315	0739	0363	0301	0301	0070	0116	0000	0531	0647	0295	0279	0025	0063
22	0463	0372	0148	0295	0367	0400	0154	0105	0020	0461	0279	0253	0121	0056	0000
23	0591	0287	0784	0496	0420	0347	0155	0196	0041	0255	0318	0000	0165	0109	0048
24	0468	0000	0609	0346	0332	0279	0326	0217	0211	0428	0472	0350	0180	0118	0060

Table XXXI. has been formed in the same manner as Table XI. The numbers in the first column are $\frac{24}{25}$ths of the moon's hour-angles from the meridian.

Diurnal Variation of the Horizontal Component with reference to the Moon's Hour-Angle.—In this case, as in that for the magnetic declination, the means for the lunations in winter give a somewhat different law from those for the lunations in summer. The following are the means at nearly two-hourly intervals for the summer and winter groups, and for the whole twelve lunations:—

Groups,		$0^h\,0^m$	$2^h\,25^m$	$4^h\,20^m$	$6^h\,15^m$	$8^h\,10^m$	$10^h\,5^m$	$12^h\,0^m$	$13^h\,55^m$	$15^h\,50^m$	$17^h\,45^m$	$19^h\,40^m$	$21^h\,35^m$
Winter,...	0·000	066	000	073	086	136	096	254	231	131	215	197	104
Summer,	0·000	155	147	144	098	066	114	212	283	156	073	000	070
Year 1844,	0·000	037	000	035	019	028	033	160	184	070	070	025	012

In the winter group, for which the moon is in opposition north of the equator—

The maximum occurs about 2 hours after the moon's inferior transit.
The minimum .... 2 hours .... superior transit.

If there are secondary maxima or minima, they are not well marked in the means for 1844.

In the summer group, for which the moon is in opposition south of the equator, the variation is distinctly double;

The principal maximum occurs about 2 hours after the moon's inferior transit.
The principal minimum .... $4\frac{1}{2}$ ...... before ....superior transit.
A secondary maximum .... 2 ...... after ....
A secondary minimum .... 8 ...... after ....

In the group for the year,

The maximum occurs about $1\frac{1}{2}$ hours after the moon's inferior transit,
The minimum .... 2 ...... after .... superior transit.

There are appearances of minima before and after the latter epoch, but they are not distinct. The variation for the year, therefore, has the same epochs as that for the winter group.

As the range of this variation is so small, it was supposed that the large disturbances might have considerable effect in destroying its regularity. In order to test this, all those observations which differed more than 25 scale divisions (0·0035) from the monthly means for the corresponding hours, were rejected in the summations, quantities interpolated from the preceding and succeeding observations having been substituted. The following are the resulting variations at nearly two hourly intervals:—

	$0^h\ 0^m$	$2^h\ 25^m$	$4^h\ 20^m$	$6^h\ 15^m$	$8^h\ 10^m$	$10^h\ 5^m$	$12^h\ 0^m$	$13^h\ 55^m$	$15^h\ 50^m$	$17^h\ 45^m$	$19^h\ 40^m$	$21^h\ 35^m$
Year 1844, 0·000	047	053	101	055	076	074	164	187	059	078	000	071

These give the same time of maximum, but the minimum occurs four hours before the superior transit, instead of after it; a secondary minimum also occurs about seven hours after the superior transit,—a secondary maximum occurring between the two latter epochs. The elimination of those observations affected by large irregularities renders the variation for the year analogous, in its singular points, to that for the summer months given previously; it is quite possible, therefore, that the differences between the law of variation for the summer and winter groups may be due chiefly to intermittent disturbances.

INTERMITTENT DISTURBANCES.

Effect of Intermittent Disturbances on the Yearly Mean of the Horizontal Component.—Performing discussions for the horizontal component of magnetic force similar to those already made for the magnetic declination (p. 343), we obtain the following results:—

Mean of the horizontal component for 1844, as deduced from 120-day series of hourly observations, greater than that deduced from the whole series by	0·000189
Mean of the horizontal component for 1844, as deduced from 60-day series of hourly observations, greater than that deduced from the whole series by	0·000251

Hence the effect of disturbances in 1844, was to diminish the mean value of the horizontal component of force; the mean for the 60-day series of observations being greatest, 0·000062 greater than that of the 120-day series, and 0·000251 greater than that for the complete series.

Effect of Disturbances on the Monthly Means of the Horizontal Component.—The corrections of the means from the 10 days and 5 days selected in each month to the means from the complete series, are, in scale divisions, as follow:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
10 days,	−0·78	−2·47	−2·85	−2·25	−0·21	+0·13	−0·15	−0·77	−0·44	−3·62	−1·17	−1·67
5 days,	−1·06	−2·93	−3·75	−2·93	−0·96	+0·82	+0·01	−0·97	−1·11	−4·03	−2·44	−2·11

The corrections for both series give the same result; but it is most marked for the 5-day series, that least affected by disturbances. This result may be stated as follows:—The effect of disturbances is to diminish the monthly mean of the horizontal component in all cases, with the exception of that for June, and, perhaps, July; the diminution is greatest near the equinoxes, and least at the solstices; at the summer solstice the effect is to increase the monthly mean. When we compare this result with that already given for the annual period (see p. 356), we might be induced to conclude that the latter is due to disturbances: this, however, is not the case. If we apply the above corrections reduced to parts of force, to the monthly means,

p. 356, for which the secular change has been eliminated, we obtain the following quantities, which are the monthly means of the 10 days and 5 days, with the secular change eliminated:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
10 days, 0·00	2772	2969	2616	2625	2820	3297	3273	2930	2646	2853	2684	3004
5 days, 0·00	2811	3033	2742	2720	2925	3200	3251	2958	2739	2910	2862	3065

The months with the highest mean values are June and July, December and February; those with the lowest are March and April, September and November. We have therefore the same law of annual period as from the complete series of observations, namely, maxima near the solstices, and minima near the equinoxes. An examination of the days which have been selected as most free from disturbances has shewn, that these days are generally near the time of new moon; at which time, according to the previous discussion, p. 358, the horizontal component has its greatest value, and in accordance with a discussion which follows, p. 369, at which time magnetic disturbances are a minimum. Though no elimination of disturbances will destroy the annual variation of the horizontal component, it is evident, for 1844 at least, that disturbances increase its amount, and it will be a question to be decided by a more extensive induction, whether the annual variation be not due to a regular action of the cause producing the disturbances.

Effect of Disturbances on the Hourly Means of the Horizontal Component.—The following Tables contain the differences for each month between the hourly means obtained from the whole hourly observations, and those from the selected series of 10 days and 5 days.

TABLE XXXII.—Differences between the Hourly Means of Bifilar Scale Readings for the whole Series in each Month, and those for the selected Ten Days; or Table XXVI. *minus* Table XXVIII.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.
12	−0·11	+0·48	−0·22	−1·65	−2·23	+0·30	+0·58	+0·16	−1·12	+0·03	−1·03	−1·43	−0·52
13	+0·71	−1·21	−5·73	−0·07	−1·32	−0·09	+0·06	−1·99	−0·53	+0·29	−0·01	+0·37	−0·80
14	+0·05	−1·10	−3·86	−1·32	−1·78	−0·13	−0·46	−1·14	−1·96	−0·20	−1·68	−0·73	−1·19
15	−0·24	−0·54	−1·54	−2·99	−1·23	−0·17	−0·57	−1·67	+0·42	+1·69	+0·45	−1·11	−0·62
16	−0·07	−0·70	−0·45	−0·69	−1·75	−1·62	−0·32	−0·67	+0·94	+0·59	−0·11	−0·06	−0·41
17	+0·92	+2·05	−2·92	−0·16	+0·15	−1·28	−1·26	−1·68	+2·04	−0·33	+0·13	−0·13	−0·21
18	+1·06	+1·33	+0·97	−0·31	+0·67	−1·79	−0·08	−0·91	+2·61	−0·34	+1·07	+0·12	+0·36
19	+0·77	+0·64	+0·60	−2·14	+0·06	−1·44	−0·46	−1·26	+0·08	−0·55	+1·12	+1·06	−0·13
20	+0·57	+1·04	−0·73	−3·76	−0·91	−1·24	−0·53	−1·80	+3·70	−1·37	+0·91	+0·99	−0·27
21	+0·80	+0·20	+0·19	−3·36	−0·29	−1·34	−1·41	−1·02	+2·11	−1·81	+0·75	+0·66	−0·38
22	−0·40	+0·08	+0·23	−0·39	−0·71	−0·81	−0·86	−0·76	−0·06	−1·47	−0·40	+0·59	−0·40
23	+0·49	−1·38	+1·17	−0·24	−0·17	−0·88	+0·59	−0·29	−1·10	−0·09	−0·38	+1·13	−0·10
0	−0·83	−0·89	+1·61	+2·84	+0·63	+1·38	+1·74	−0·38	+0·32	+2·08	+2·04	+1·37	+0·99
1	−1·66	+0·89	+2·27	+3·14	−0·78	+0·77	+0·44	+1·03	−0·82	+2·18	+0·72	+0·19	+0·70
2	−0·30	+1·31	+1·27	+4·10	+1·70	+1·50	−0·19	+2·05	+0·22	+0·78	+1·13	−0·12	+1·12
3	−0·87	+1·33	+2·72	+1·07	−0·01	+1·70	−0·47	+3·12	−0·73	+2·66	+0·16	+1·03	+0·97
4	+1·12	+2·36	+3·65	+3·78	+4·07	+0·90	+1·33	+3·83	+0·83	+2·02	−2·09	−0·75	+1·76
5	−0·09	+0·17	+5·06	+4·50	+2·29	+0·47	+0·04	+4·11	+2·33	+1·81	+1·52	−1·63	+1·72
6	−0·87	−1·08	+0·37	+3·41	+2·60	+1·07	+1·57	+3·78	−0·88	−0·95	+1·12	−0·32	+0·82
7	−1·77	−0·77	+3·23	−1·00	+1·72	+0·96	+1·31	+2·36	−1·56	−1·46	−0·75	−0·78	+0·13
8	+0·83	+0·16	+1·69	−0·52	+1·22	+0·86	−0·10	+0·07	−2·20	−0·71	+0·36	+1·65	+0·27
9	+0·10	+0·42	−3·02	−1·81	−0·22	+0·75	−0·67	−2·19	−1·37	−2·91	−1·80	+0·05	−1·06
10	0·00	−1·93	−5·58	−0·74	−0·75	+0·71	+0·06	−0·91	−1·33	−0·34	−2·02	−1·17	−1·16
11	−0·26	−2·90	−1·13	−1·79	−3·09	−0·49	−0·40	−3·72	−1·95	−1·53	−1·41	−0·90	−1·63

TABLE XXXIII.—Differences between the Hourly Means of Bifilar Scale Readings for the whole Series in each Month, and those for the selected Five Days; or Table XXVI. *minus* Table XXIX.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.
12	−0·03	+0·66	−3·08	−3·07	−1·84	−0·67	−0·47	−1·11	−1·93	+0·12	−0·68	−1·21	−1·10
13	−0·17	−0·80	−7·65	−0·77	−1·53	−0·18	−0·91	−2·47	−0·87	−1·17	+0·49	−0·05	−1·34
14	−0·33	−0·15	−5·94	−1·78	−1·54	−0·71	−1·42	−1·65	−2·18	+0·20	−2·38	−1·63	−1·62
15	−0·85	−0·01	−2·97	−3·69	−0·93	−0·65	−1·52	−1·43	−0·08	+1·37	+0·81	−1·45	−0·95
16	+0·51	+0·32	−1·90	−0·65	−1·18	−1·71	−1·18	−1·20	+0·65	+0·61	+0·12	−0·13	−0·48
17	+1·42	+2·49	−3·62	−0·62	+0·88	−2·34	−1·62	−2·21	+2·69	+0·18	+0·23	+0·09	−0·20
18	+1·68	+1·75	+0·40	−1·11	+1·78	−3·07	−0·43	−0·87	+2·80	+0·63	+0·73	+1·18	+0·45
19	+1·60	+1·33	−0·04	−2·34	+0·33	−2·93	−1·29	−0·79	+1·09	+0·21	−0·01	+1·59	−0·11
20	+0·68	+1·56	−1·24	−3·96	−0·46	−1·76	−2·32	−0·96	+4·65	−1·08	+1·25	+1·74	−0·16
21	+1·37	−0·29	+0·40	−3·92	−0·81	−1·32	−2·80	−0·43	+1·66	−1·20	+1·25	+1·75	−0·36
22	−0·60	−0·43	+1·36	−0·46	−1·83	−0·23	−1·21	−0·73	−1·37	−1·39	+0·13	+0·88	−0·49
23	−0·04	−2·89	+2·38	−0·35	+0·15	+1·26	+1·89	−0·77	−0·84	+1·43	+0·66	+1·75	+0·38
0	−1·14	−1·46	+2·97	+3·09	+1·40	+3·79	+2·22	−1·50	−2·90	+2·70	+2·14	+2·29	+1·13
1	−1·28	−0·39	+4·05	+4·30	−0·64	+1·86	+0·94	+0·60	−1·01	+2·07	+0·73	−0·39	+0·91
2	+0·21	+1·56	+3·59	+4·26	−0·38	+1·69	+2·15	+2·02	−1·23	+1·09	+1·28	−0·89	+1·28
3	−0·47	+1·70	+5·71	+2·11	−0·62	+1·70	−0·05	+3·64	−1·02	+2·39	+0·16	+1·52	+1·40
4	+0·59	+2·29	+5·51	+4·85	+3·42	−0·03	+3·09	+5·32	+2·53	+1·53	−1·87	−1·56	+2·14
5	−0·29	+0·55	+4·74	+4·39	+3·21	+0·48	−0·01	+3·74	+2·59	+1·01	+1·83	−2·13	+1·68
6	−0·73	−0·45	+0·37	+3·84	+2·00	+0·49	+2·47	+3·34	−0·39	−1·36	+1·80	+0·07	+0·96
7	−2·57	−1·08	+2·84	−0·20	+2·48	+1·39	+1·91	+2·43	−0·42	−1·45	−0·51	−1·33	+0·29
8	−0·41	−0·39	+1·51	−0·59	+2·01	+0·47	+0·36	+0·03	−1·08	−0·97	+0·05	+0·82	+0·15
9	+0·54	−1·02	−3·73	−1·95	−0·75	+1·65	−0·44	−2·24	−0·55	−4·34	−3·13	−0·38	−1·36
10	+0·42	−2·17	−4·53	+0·10	−0·79	+1·03	+0·61	−0·58	−0·33	−1·85	−2·53	−1·17	−0·98
11	−0·21	−2·75	−1·16	−1·62	−4·40	−0·26	−0·02	−2·01	−2·54	−0·69	−2·58	−1·39	−1·63

Considering, first, the differences of the hourly means for the year, as obtained from a comparison of the whole observations with the 60-day series of observations, we obtain the following results:—

The mean effect of disturbances upon the hourly mean of the horizontal component is a positive maximum at $4^h\ 10^m$ P.M.; it is a negative maximum about $12^h\ 30^m$, or near midnight; there is the appearance of a secondary positive maximum at $6^h\ 10^m$ A.M., and minimum at $10^h\ 10^m$ A.M.; the effect is zero about 5^h, 7^h, and $10^h\ 0^m$ A.M., and at $8^h\ 20^m$ P.M. The comparison of the whole series with the 120-day series, gives almost exactly the same result. It will be perceived that the epochs for the effect of disturbance on the horizontal component, are considerably different from those for the magnetic declination: the effect on the latter is zero when the effect on the former is a maximum, and *vice versa*. The maximum effect of disturbance in diminishing the horizontal component, occurs about two or three hours after the corresponding epoch for the magnetic declination, the time for the latter being about 10^h P.M.

The greatest effects of disturbance in increasing and diminishing the hourly mean of the horizontal component, as deduced from the comparison of the whole series with the 60-day series of observations, are as follow, the whole horizontal component being unity:—

Maximum effect in increasing the horizontal component ($4^h\ 10^m$ P.M.) ....=0·000300
.... diminishing .... ($11^h\ 10^m$ P.M. and $2^h\ 10^m$ A.M.)=0·000228

The effect of disturbances on the hourly means of the horizontal component is therefore less in comparison with the diurnal range, than in the case of the magnetic declination; in the latter case the maximum effect is between $\frac{1}{4}$ and $\frac{1}{5}$ of the range of the mean diurnal variation, whereas in the case of the horizontal component it is only between $\frac{1}{7}$ and $\frac{1}{8}$ of the diurnal range.

An examination of the differences for each month, will shew that the law is somewhat variable; the secondary maximum about 6^h A.M., and minimum about 10^h A.M, are most distinct in some months, especially in the winter.

The following are the differences of the hourly means for the 120-day series and for the 60-day series, or means for 120 days *minus* means for 60 days:—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
−0·58	−0·54	−0·43	−0·33	−0·07	+0·01	+0·09	+0·02	+0·11	+0·02	−0·09	+0·48
0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
+0·14	+0·21	+0·16	+0·43	+0·38	−0·04	+0·14	+0·16	−0·12	−0·30	+0·18	0·00

These differences follow nearly the same law as those already considered. The maximum of the positive effect occurs about 3^h P.M., and of the negative effect immediately after midnight, while there is also a secondary positive maximum about 6^h A.M., and minimum about 10^h A.M.; whence, as in the analogous discussion for the magnetic declination, we may conclude, that the smallest disturbances obey the same diurnal law as the larger disturbances.

Differences of the Individual Observations from the Monthly Means for the corresponding hours.—Adopting the process already indicated, p. 346, for the magnetic declination, we obtain the following Table:—

TABLE XXXIV.—Mean Difference of a Single Observation of the Bifilar Magnetometer from the Monthly Mean, at the corresponding hour, for each Civil Day and Week in 1844.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.
1	2·33	5·16	3·09	7·80	7·28	2·88	3·27	9·40	[4·22]	19·98	3·72	[3·32]
2	3·82	5·19	5·85	6·29	3·38	[2·92]	1·91	9·57	4·21	4·14	3·96	2·19
3	1·74	5·86	[5·75]	7·17	5·55	2·45	1·83	6·35	2·77	2·69	[3·50]	2·08
4	3·34	[5·69]	5·43	5·35	5·96	2·22	2·58	[5·66]	3·65	2·45	3·78	4·34
5	3·85	5·83	6·28	3·23	[4·50]	2·08	2·22	2·86	1·89	2·67	1·33	2·63
6	4·53	7·46	8·80	3·97	3·79	1·98	2·40	2·34	2·17	[3·08]	3·08	2·63
7	[3·40]	4·65	8·46	[3·80]	2·60	2·30	[3·56]	3·46	5·30	3·12	1·94	2·01
8	1·77	4·57	6·91	2·51	5·70	3·00	5·50	3·15	[3·26]	4·00	2·67	[2·80]
9	3·93	2·74	3·90	3·95	4·25	[2·28]	4·95	9·98	3·47	3·55	3·07	3·02
10	2·98	2·87	[4·70]	3·75	2·69	1·92	3·70	5·30	2·92	3·53	[3·20]	2·67
11	2·00	[2·80]	2·24	3·14	2·47	2·60	2·30	[4·84]	3·80	3·96	6·16	3·84
12	2·50	1·85	3·33	4·33	[3·48]	1·89	2·36	4·09	3·57	3·27	3·37	3·55
13	1·32	1·85	3·34	3·75	2·26	3·59	4·80	3·59	3·57	[3·86]	1·95	2·60
14	[1·95]	2·93	4·40	[7·00]	4·45	2·71	[3·08]	2·92	4·58	5·43	3·92	7·55
15	2·02	3·74	4·64	5·92	4·77	2·38	3·75	2·46	[3·14]	3·14	3·56	[3·68]
16	1·87	1·84	3·92	2·30	1·62	[3·14]	2·33	3·07	2·45	3·83	12·12	4·22
17	2·02	4·90	[4·42]	22·56	2·65	4·28	2·96	3·68	2·90	3·33	[5·42]	2·02
18	1·69	[3·07]	3·92	5·99	2·95	3·92	3·50	[3·27]	1·77	4·79	4·81	2·17
19	1·35	2·83	6·02	3·25	[4·05]	1·95	3·55	2·65	4·14	6·01	6·00	4·30
20	1·47	2·75	3·65	2·85	5·29	2·62	2·00	3·95	7·02	[6·02]	2·09	5·97
21	[2·39]	2·40	3·37	[4·59]	6·09	2·97	[2·88]	3·84	4·77	15·55	2·14	5·71
22	2·99	2·76	4·42	4·18	5·67	2·55	2·82	6·44	[4·65]	2·85	9·27	[3·50]
23	4·30	1·97	5·03	5·90	6·59	[2·73]	2·44	6·67	3·04	3·60	9·60	1·31
24	2·52	4·60	[4·85]	5·36	3·20	2·17	2·98	5·74	5·04	1·71	[5·11]	1·41
25	3·01	[3·70]	5·01	8·10	3·50	2·64	7·39	[4·51]	3·86	6·75	2·60	2·34
26	1·42	3·22	5·39	5·93	[3·72]	3·45	3·74	3·03	11·19	7·71	2·34	3·30
27	2·75	2·65	5·86	7·72	3·26	2·33	4·87	2·71	6·80	[4·32]	4·74	3·82
28	[2·17]	7·02	4·79	[6·10]	2·99	4·81	[4·40]	2·50	3·09	3·86	5·08	2·72
29	2·01	5·02	11·90	4·42	2·81	5·75	2·87	2·96	[8·66]	2·97	3·18	[5·64]
30	1·82		22·84	3·13	2·63	[3·32]	2·04	6·11	6·75	2·95	3·09	11·72
31	2·05		[10·13]		5·26		5·47	5·65		5·15		6·63

Annual Variation of the mean difference for the Horizontal Component.—The following are the average differences, for each month, of an observation from the monthly mean at the corresponding hour in parts of the horizontal component:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·000	350	533	823	770	568	400	469	645	587	689	591	521

These quantities give the same annual law as has already been obtained for the magnetic declination. The maximum disturbance of the horizontal component occurs near the equinoxes, and the minimum disturbance occurs near the solstices. While the effect of disturbances on the hourly means is less for the horizontal component than for the magnetic declination, the individual observations of the former differ more from the corresponding monthly means than for the latter, the diurnal range in each case being the standard of comparison.

TABLE XXXV.—Mean Difference of a Single Observation of the Bifilar Magnetometer from the Monthly Mean at the corresponding hour, with reference to the Moon's Age, Declination, and Distance from the Earth, for 1844.

Moon's Age.	Mean Difference.	Moon's Age.	Mean Difference.	After Moon farthest North.	Mean Difference.	After Moon farthest North.	Mean Difference.	Before and after Perigee.	Mean Difference.	Before and after Apogee.	Mean Difference.
Day.	Sc. Div.	Day.	Sc. Div.	Day.	Sc. Div.	Day.	Sc. Div.	Day.	Sc. Div.	Day.	Sc. Div.
15	4·38	0	4·76	0	3·53	14	3·53	7	4·27	7	4·60
16	4·56	1	3·67	1	4·25	15	3·86	6	3·90	6	3·77
17	5·59	2	3·47	2	4·66	16	3·61	5	5·59	5	4·40
18	5·04	3	3·34	3	4·11	17	4·00	4	4·11	4	4·55
19	5·17	4	3·64	4	4·82	18	3·87	3	3·95	3	4·20
20	3·67	5	3·74	5	5·14	19	4·53	2	3·63	2	6·12
21	3·40	6	4·60	6	4·37	20	4·23	1	4·50	1	3·82
22	3·05	7	3·89	7	4·29	21	4·61	P	4·24	A	4·50
23	2·02	8	4·49	8	3·94	22	3·38	1	4·21	1	2·85
24	3·12	9	4·30	9	3·92	23	5·84	2	3·59	2	3·81
25	3·44	10	5·66	10	3·72	24	5·06	3	3·56	3	3·94
26	3·20	11	4·37	11	3·02	25	3·92	4	3·00	4	4·25
27	3·72	12	5·96	12	3·90	26	4·47	5	4·30	5	4·16
28	3·47	13	4·87	13	3·73	27	3·65	6	4·25	6	4·66
29	3·12	14	5·36					7	4·29	7	4·88

This Table has been formed from Table XXXIV., in the manner already described, Table II.

Variation of the Mean Differences with respect to the Moon's Age.—From the first portion of Table XXXV. it appears that the average difference is a maximum about opposition, and a minimum near conjunction. The following are the means of groups :—

	Sc. Div.
14 days to 16 days, Full Moon,	4·77
17 ...... 20 ...	4·87
21 ...... 24 ...	3·15
25 ...... 28 ...	3·46
29 days to 1 day, New Moon,	3·85
2 ...... 5 days,	3·55
6 ...... 9 ...	4·32
10 ...... 13 ...	5·22

These means indicate in a general manner the result stated above. There is, however, a secondary maximum apparent at the time of conjunction, minima occurring before and after that epoch.

The average difference for the 11 days (10 – 20), including full moon, = 4·97 Sc. Div.
.... 11 ... (25 – 5), ... new moon, = 3·60 ......

Variations of the Mean Differences with reference to the Moon's Declination.—A general examination of the second portion of Table XXXV. shews that the average difference of a single observation from its corresponding monthly mean is a maximum twice, namely, when the moon is about two days north of the equator, and that it is a minimum twice, namely, when the moon is farthest north and farthest south. This will be seen also in the following means of groups :—

	Sc. Div.
27 days to 1 day, Moon farthest North,	3·81
2 ...... 5 days,	4·68
6 ...... 8 ...	4·20
9 ...... 12 ...	3·64
13 days to 15 days, Moon farthest South,	3·71
16 ...... 19 ...	4·00
20 ...... 22 ...	4·07
23 ...... 26 ...	4·82

From these the principal minimum occurs when the moon is farthest south; the difference between the minima is small, and is perhaps accidental, as the result for the magnetic declination placed the principal minimum when the moon was farthest north. (See p. 347.)

TABLE XXXVI.—Mean Difference of a Single Observation of the Bifilar Magnetometer from the Monthly Mean at the corresponding hour, for each Hour in each Month of 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.
12	2·81	3·17	8·12	5·95	4·44	2·49	2·63	3·80	4·92	4·01	4·43	4·48
13	1·86	4·45	12·89	3·67	4·14	2·13	2·67	4·95	4·26	3·85	3·32	2·68
14	1·86	5·00	10·96	4·19	4·41	2·03	2·07	3·93	4·69	4·71	3·93	4·67
15	1·81	3·72	7·33	6·28	5·00	2·36	2·64	3·66	3·58	2·92	2·65	4·80
16	2·06	4·28	5·42	3·70	4·84	2·42	2·91	3·16	3·62	4·03	2·79	3·45
17	1·83	2·47	9·59	5·64	3·05	2·78	3·13	3·89	3·98	7·32	4·83	3·34
18	2·06	2·18	3·37	3·78	3·23	2·99	3·03	3·69	4·70	5·73	3·89	3·23
19	1·79	2·85	4·24	5·39	3·09	2·94	3·56	4·44	4·50	4·73	3·11	2·92
20	2·03	2·19	4·63	6·97	3·56	2·19	4·44	5·53	3·90	6·23	3·88	3·08
21	2·31	3·36	4·68	7·80	3·78	2·36	3·38	4·88	3·93	6·88	4·55	3·42
22	2·89	3·89	4·86	5·94	4·76	3·09	4·01	3·84	4·93	7·54	4·32	3·82
23	2·03	4·51	4·45	5·69	3·41	3·90	3·59	4·00	4·39	5·41	4·60	3·42
0	2·53	3·88	3·21	5·92	4·06	4·34	3·81	4·65	5·72	3·59	3·60	3·18
1	2·85	2·89	3·80	4·17	3·99	3·61	4·75	4·38	3·82	2·65	3·42	2·81
2	2·21	2·40	4·00	5·10	4·16	3·60	4·33	4·65	4·35	3·66	3·12	2·89
3	2·84	2·64	2·92	7·94	4·53	2·87	6·04	5·41	3·55	4·60	3·56	4·25
4	1·84	3·14	3·08	6·49	4·07	3·71	4·67	7·58	5·10	4·27	5·02	5·22
5	2·50	4·18	4·65	9·32	3·75	3·23	2·95	5·65	4·13	4·19	5·74	4·27
6	3·20	3·84	4·43	6·84	5·00	2·92	4·05	5·83	2·86	4·23	4·81	4·23
7	4·13	3·68	4·89	3·99	4·41	2·26	3·18	4·84	4·75	5·68	5·46	4·52
8	3·76	5·10	5·27	4·07	3·70	2·06	2·37	4·06	4·58	5·83	4·13	3·21
9	3·33	7·06	7·48	4·42	3·48	2·96	2·06	4·72	3·78	6·53	5·42	3·75
10	2·81	5·43	10·10	3·75	4·03	3·04	2·10	3·73	2·93	4·62	6·32	3·58
11	2·56	6·49	6·69	4·88	4·61	2·31	2·11	5·33	3·57	4·98	4·27	4·09

TABLE XXXVII.—Mean Difference of a Single Observation of the Bifilar Magnetometer from the Monthly Mean at the corresponding hour, for each hour in each of the Astronomical Quarters, and in the Year 1844.

Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	h.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.	Sc. Div.
12	3·91	5·75	3·19	4·24	4·27	0	3·10	4·34	4·07	4·65	4·04
13	2·62	7·00	2·98	4·35	4·24	1	3·03	3·62	4·12	3·62	3·59
14	3·49	6·72	2·84	4·44	4·37	2	2·74	3·83	4·03	4·22	3·71
15	3·09	5·78	3·33	3·39	3·90	3	3·55	4·50	4·48	4·52	4·26
16	2·77	4·47	3·39	3·60	3·56	4	4·03	4·24	4·15	5·65	4·52
17	3·33	5·90	2·99	5·06	4·32	5	4·17	6·05	3·31	4·66	4·55
18	3·06	3·11	3·08	4·71	3·49	6	4·08	5·04	3·99	4·31	4·35
19	2·61	4·16	3·20	4·56	3·63	7	4·70	4·19	3·28	5·09	4·32
20	3·00	4·60	3·40	5·22	4·05	8	3·70	4·81	2·71	4·82	4·01
21	3·43	5·28	3·17	5·23	4·28	9	4·17	6·32	2·83	5·01	4·58
22	3·68	4·90	3·95	5·44	4·49	10	4·24	6·43	3·06	3·76	4·37
23	3·35	4·88	3·63	4·60	4·12	11	3·64	6·02	3·01	4·63	4·32

Diurnal Variation of the Mean Difference.—The mean difference is a maximum twice and a minimum twice in the day, in the variations for the year. The greatest mean occurs at $9^h\ 10^m$ P.M., but the greatest mean of two consecutive hours is that for 4^h and 5^h P.M.: the interpolated epochs are as follow: maxima at $4^h\ 40^m$

P.M., and at $10^h\ 10^m$ A.M.; minima at $6^h\ 30^m$ A.M., and at $1^h\ 40^m$ P.M. Although the greatest value occurs about $4^h\ 40^m$ P.M., the mean difference varies little from $4^h\ 10^m$ P.M. till $2^h\ 10^m$ A.M. The following are the approximate epochs of maxima and minima of the diurnal variation in each of the astronomical quarters of the year :—

Nov., Dec., Jan.,	Min.	6^h A.M.	Max.	10^h A.M.	Min.	2^h P.M.	Max.	$+6^h\ 30^m$ P.M.
Feb., Mar., April,		6^h A.M.		10^h A.M.		2^h P.M.		$+1^h$ A.M.
May, June, July,		-9^h P.M.		$+\ 3^h$ P.M.				
Aug., Sept., Oct.,		-4^h A.M.		$+\ 9^h$ A.M.		1^h P.M.		6^h P.M.
Year,		6^h A.M.		10^h A.M.		2^h P.M.		5^h P.M.

Where the principal maximum or minimum is distinctly marked the former is indicated above by + and the latter by −

These epochs indicate that the diurnal law of variation of disturbances was different in different quarters of 1844. The laws of variation in three quarters bear a considerable resemblance to each other, and to that for the year, namely, winter, spring, and autumn; in these quarters the minima occur about 5 A.M. and 2 P.M.; one maximum occurs in all about 10^h A.M., the other occurs in two about 6^h P.M., but in spring it is about 1^h A.M. The variation for summer differs most from the others; there is but one maximum and one minimum. Much of these differences may be due to the fewness of the observations upon which the law depends.

Annual Variation of the number of Positive Differences.—The following are the numbers of differences in 100 which were positive :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
53·1	54·8	60·1	52·1	52·5	45·7	47·1	49·8	54·3	61·2	55·6	59·6

Whence the horizontal component was *oftenest* in excess of its monthly mean for the corresponding hours about October and March, when there were about 60 positive to 40 negative observations; it was least often in excess about June, when there were about 46 positive to 54 negative observations. The number of positive differences was less than the number of negative differences in the months of June, July, and August, but greater in the other nine months; and in the year there were nearly 54 positive to 46 negative observations.

Diurnal Variation of the number of Positive Differences.—The number of positive differences in 100 for each hour of Makerstoun mean time in 1844 are as follow :—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
54·5	56·7	58·6	53·0	57·0	58·9	51·0	53·2	51·6	55·4	59·6	56·1

0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
52·2	50·3	51·6	48·1	47·1	49·4	48·7	54·8	49·4	57·0	55·4	57·3

The number of positive differences is a maximum about 4^h A.M. and 10^h A.M.; it is a principal minimum about 4 P.M. and a secondary minimum about 7^h A.M. The number of positive differences is greater than the number of negative differences in each hour, excepting those from 3^h till 7^h.

Mean Disturbance.

Making use of the means deduced from the five days least disturbed (Table XXIX.) as approximate normal means, as has been already done for the magnetic declination, pages 349 and 350, we obtain the following results.

Annual Variation of the Mean Disturbance.—The following are the mean disturbances for a single observation in parts of the horizontal component in each month of 1844 :—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·000	358	560	865	774	584	431	490	643	602	700	599	521

These values differ little from those for the mean difference; the law of variation is therefore the same, namely, maxima near the equinoxes and minima near the solstices.

Diurnal Variation of the Positive and Negative Sums of Disturbances.—The following are the sums of disturbances in scale divisions for each hour in 1844.

12^h	1 A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
+495	424	415	450	482	661	665	586	636	625	619	737
−843	846	924	749	633	729	521	618	694	742	775	612

0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
879	759	829	951	1090	1005	841	726	685	488	504	425
521	476	426	512	414	478	538	632	636	921	808	940

The sums of *positive* disturbances—those which increase the value of the horizontal component—are a maximum at $4^h\ 10^m$ P.M., and they are a minimum about $1^h\ 30^m$ A.M.; there is the appearance of a secondary

maximum about 6^h A.M., but it is not well marked. The sums of *negative* disturbances are a minimum about $3^h\ 10^m$ P.M., and a maximum about midnight; they are a secondary minimum at $6^h\ 10^m$ A.M., and a maximum at $10^h\ 10^m$ A.M. On the whole, therefore, the epochs of maximum for the positive di sturbancearewithin an hour of those of minimum for the negative disturbance, and *vice versa.*

Diurnal Variation of the Mean Disturbance.—The following are the mean disturbances, in scale divisions for each hour, without regard to sign:—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
4·26	4·05	4·41	3·82	3·55	4·43	3·78	3·83	4·24	4·35	4·44	4·30

0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
4·46	3·93	4·00	4·66	4·79	4·72	4·39	4·32	4·21	4·49	4·18	4·35

These quantities give nearly the same law of variation as the mean differences; the maximum disturbance of the horizontal component occurs at $4^h\ 10^m$ P.M., the minimum about 5^h A.M.; a secondary maximum occurs about 10^h A.M., and a minimum about 1^h P.M.

Annual Variation of the number *of Positive Disturbances.*—The following are the numbers per cent. of hourly observations in each month, which were positive or greater than the normal means at the corresponding hours:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
54·0	57·7	66·0	52·1	52·6	45·0	46·6	52·8	55·2	60·6	56·9	61·1

The greatest number of positive disturbances occurs near the equinoxes, and the least number at the summer solstice; on the whole, the number for the sun south of the equator is greater than for the sun north of the equator, the number per cent. for the former being 58·4, and for the latter 50·7. In the year 1844, there were, in 100 observations, 54·5 greater and 45·5 less than the normal means at the corresponding hours.

Diurnal Variation of the numbers *of Positive Disturbances.*—The numbers per cent. of hourly observations which were greater than the monthly means at the corresponding hours, are as follow:—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
47·5	47·8	44·9	50·3	51·6	58·0	55·4	55·1	55·4	53·5	54·1	59·2

0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
60·5	57·6	63·4	59·9	67·2	64·0	58·9	57·3	53·8	46·5	52·5	46·5

The number of positive disturbances is a maximum at 4^h P.M., and a minimum about 2^h A.M.; there is the appearance of a secondary maximum at 5^h A.M., and minimum at $9^h\ 30^m$ A.M. From about 9^h P.M. till 2^h A.M., the number of positive disturbances is less than the number of negative disturbances; at all the other hours of the day the number of positive disturbances is greatest. There are nearly two positive disturbances for one negative disturbance at 4^h P.M.

Diurnal Variation of the Positive and Negative means *of Disturbance.*—A comparison of the diurnal laws of variation for the *sums* and *numbers* of positive disturbances, will shew that they give nearly the same epochs of maxima and minima; it is uncertain, therefore, whether the variation of the sums depends solely or chiefly on the variation of the numbers of disturbances which are positive or negative. The following are the mean values, in scale divisions, of the positive and negative disturbances for each hour, obtained by dividing the sums of the positive disturbances by their number, and the sums of the negative disturbances by their number:—

	12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
+	3·32	2·83	2·94	2·85	2·98	3·63	3·82	3·39	3·65	3·72	3·64	3·96
−	5·11	5·16	5·34	4·80	4·17	5·52	3·72	4·38	4·96	5·08	5·39	4·78

	12^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
+	4·62	4·19	4·16	5·05	5·17	5·00	4·55	4·03	4·05	3·35	3·05	2·91
−	4·20	3·58	3·71	4·06	4·02	4·23	4·17	4·72	4·38	5·48	5·42	5·60

These values differ considerably; the law of their variation is almost exactly that already obtained for the *sums* of positive and negative disturbance.

The maximum of the *mean* positive disturbance occurs about $4^h\ 10^m$ P.M.
The minimum .... $2^h\ 10^m$ A.M.
There is also the appearance of a secondary maximum about 6^h A.M.
The maximum of the *mean* negative disturbance occurs about $1^h\ 30^m$ P.M.
The minimum ....$11^h\ 0^m$ P.M.
There is also a secondary maximum about 6^h A.M., and minimum about 10^h A.M.

The numbers of positive and negative disturbances seem, on the whole, to obey the same law as their respective sums.

Note on the least probable error of an observation of the horizontal component of magnetic force.—Investigations for the probable errors of observation corresponding to those for the magnetic declination, have not been made for the horizontal component; it will not be difficult, however, to approximate to the least probable errors of an observation from the values of the mean difference. The mean difference of an observation is least in the month of January, and in the months of June and July, being 0·00035, 0·00040, and 0·00047, for the three months respectively; which, if the distribution of the errors follows nearly the same law as that found for the magnetic declination, will give probable errors of about 0·00024, 0·00027, and 0·00032, of the horizontal component.

The mean difference, for the year, of an observation of the horizontal component, is a minimum about 6^h A.M., and 1^h and 2^h P.M., being about 0·00050; the probable error is about 0·00034.

In order that an observation of the horizontal component should have the least probable error, it should be made in the months of January, June, or July—and early in the morning. The least probable errors are about 2^h A.M. in these three months, being less than two ten-thousandths of the whole horizontal component.

VERTICAL COMPONENT OF MAGNETIC FORCE.

TABLE XXXVIII.—Mean Values of the Variations of the Vertical Component of Magnetic Force, the whole Vertical Component being Unity, for each Civil Week-Day, Week, and Month of 1844.

Civil. Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
1	7994	7784	7531	7351	7065	6888	6572	6402	[6297]	6027	6031	[6084]
2	8014	7709	7277	7214	7156	[6976]	6664	6269	6386	6448	6015	6092
3	7945	7521	[7299]	7191	7129	7014	6617	6208	6315	6331	[6046]	6057
4	7907	[7646]	7178	7415	7392	6993	6668	[6357]	6353	6322	6054	6087
5	7850	7691	7264	7408	[7215]	7030	6657	6344	6295	6330	6054	5897
6	7877	7587	7186	7108	7222	6978	6634	6445	6389	[6303]	6134	5996
7	[7896]	7582	7292	[7343]	7267	6986	[6682]	6476	6274	6293	6238	5980
8	7912	7661	7189	7456	7123	6916	6782	6510	[6320]	6271	6138	[5940]
9	7917	7501	7433	7325	6981	[6921]	6672	6615	6410	6269	6081	5945
10	7916	7534	[7413]	7348	7267	6861	6678	6298	6230	6150	[6173]	5924
11	7893	[7509]	7450	7397	7349	6893	6637	[6386]	6321	6141	6161	5896
12	7887	7521	7603	7438	[7104]	6893	6577	6279	6282	6159	6233	5856
13	7913	7458	7509	7409	7174	6791	6636	6253	6294	[6119]	6186	5875
14	[7893]	7378	7524	[7447]	7087	6894	[6607]	6360	6328	6086	6106	6167
15	7900	7219	7491	7254	6767	7014	6684	6319	[6248]	6097	6172	[6001]
16	7893	7314	7555	7284	7107	[6872]	6610	6352	6178	6083	6761	6124
17	7873	7226	[7440]	7901	7133	6768	6499	6353	6136	6143	[6311]	6037
18	7853	[7282]	7392	7359	7222	6831	6491	[6327]	6271	6186	6280	5947
19	7718	7261	7360	7485	[7076]	6935	6567	6370	6306	6225	6288	5932
20	7800	7334	7318	7453	7047	6936	6527	6263	6096	[6079]	6262	6050
21	[7803]	7338	7300	[7394]	6989	6893	[6510]	6278	6412	5684	6173	6009
22	7850	7357	7398	7395	6961	6862	6477	6453	[6249]	6059	6209	[5972]
23	7776	7419	7391	7399	6605	[6771]	6479	6492	6337	6176	5971	5969
24	7824	7379	[7378]	7273	7094	6744	6519	6253	6211	6060	[6093]	5931
25	7585	[7414]	7395	7424	6949	6628	6502	[6341]	6130	6096	6052	5942
26	7709	7420	7348	7400	[6888]	6564	6408	6287	5955	5804	6074	5949
27	......	7414	7434	7160	6843	6601	6487	6299	6355	[6002]	6077	5887
28	[7654]	7496	7390	[7313]	6890	6627	[6375]	6263	6138	5975	6082	5993
29	7690	7358	7290	7466	6947	6615	6324	6288	[6198]	6019	6080	[6094]
30	7661		6360	7362	6922	[6616]	6323	6211	6264	6059	6109	6326
31	7623		[7183]		6980		6204	6229		5986		6206
Mean	7838	7458	7341	7384	7062	6847	6552	6341	6267	6129	6155	6003

Table XXXVIII. has been formed from the daily means in micrometer divisions by the following formula:—

$$f = n\ 0{\cdot}00001,$$

where f is the quantity in the Table, and n is the daily mean in micrometer divisions corrected for temperature.

The balance-needle was removed on the 27th January 1844, for the purpose of determining its temperature coefficient; it was readjusted on the evening of the same day; all the observations before that date have been rendered comparable with those after it by the application of a correction.—*See Introduction.*

In order to render the means in Table XV., p. 238, 1843, comparable with the means in the preceding Table, the following formula must be employed:—

$$V = \frac{v + c}{0{\cdot}9} + 0{\cdot}00223.$$

Where V is the reduced value of the mean for 1843, v is the value in Table XV., 1843; c is the correction for the mean of 9 observations to the mean of 24 observations, as given, line 6 from foot of page 240, 1843; 223 micrometer divisions being the difference of the zeros for 1843 and 1844.

The mean value of the variations of the vertical component, from Table XXXVIII. = 0·006781.

Secular Change.—When the monthly means for 1843 are rendered comparable with the monthly means for 1844, we obtain the following comparisons for the secular change of the vertical component:—

		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1843, .	0·00	9922	9717	9312	8989	8794	8879	8733	8554	8163	8120	8093	7998
1844, .	0·00	7838	7458	7341	7384	7061	6847	6552	6341	6267	6129	6155	6003
Secular change,	0·00	2084	2259	1971	1605	1733	2032	2181	2213	1896	1991	1938	1995

The mean secular change corresponding to the year, from July 1, 1843, till July 1, 1844 = −0·001994.

A comparison of the mean for 1844 with that for 1845, gives the secular change for the year from July 1, 1844, till July 1, 1845 = −0·001837, whence

The mean secular change corresponding to the year, from January 1, 1844, till January 1, 1845, = −0·001915.

The mean secular changes for three years are as follow:—

July 1, 1842, till July 1, 1843,	= −0·002298
.... 1843, ... 1844,	= −0·001994
.... 1844, ... 1845,	= −0·001837

Annual Period.—The mean vertical component diminishes with the greatest rapidity from January to February, and in the months from May till August; it increases slightly from March to April, and from October to November. If the secular change be eliminated from the means at the foot of Table XXXVIII. by the application of the corrections $+n.0{\cdot}00016$, where n is the number of the month after January, we obtain the following quantities:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·00	7838	7618	7661	7864	7701	7647	7512	7461	7547	7569	7755	7763

These quantities give a result considerably different from that obtained from the observations in 1843; whether this difference be real, or merely instrumental, cannot be determined at present. From the above mean values of the variations, the vertical component is a minimum in August, and a maximum in December or January; it is also a secondary minimum about the end of February, and a maximum again in April.

Differences of the Daily Means from the Monthly Means.—The following are the average differences of the daily means from their corresponding monthly means:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·000	089	123	135	091	138	117	102	081	085	121	097	087
0·000	100	116	116	121	115	119	100	089	096	101	102	091

In order to eliminate the accidental irregularities, the mean of each three months has been taken as a mean for the middle month; these are given in the second line above, from whence, the differences of the daily means from their corresponding monthly means are a maximum in April, and a minimum in August; they are a secondary maximum in October or November, and a minimum in December. These epochs are, on the whole,

not much different from those for the anuual period, as deduced from the observations in 1844; and the result might be stated in the manner already done for the horizontal component and magnetic declination. The average difference of the daily means is a maximum when the vertical component is a maximum, and *vice versa*. In the case of the horizontal component, the average difference was a maximum when the horizontal component was a minimum.

The following are the averages of the positive and negative differences :—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
+0·000	068	140	109	079	124	091	092	084	066	117	115	113
−0·000	128	119	175	107	155	162	115	078	118	126	084	070

The positive departures from the monthly mean are greatest in the months of November, December, February, and August; they are least in the other months; the negative departures are greatest in the course of the year.

TABLE XXXIX.—Mean Variations of the Vertical Component of Magnetic Force, after eliminating the Secular Change, with reference to the Moon's Age, Declination, and distance from the Earth, for 1844.

Moon's Age.	Variations of Vertical Component.	Moon's Age.	Variations of Vertical Component.	After Moon farthest North.	Variations of Vertical Component.	After Moon farthest North.	Variations of Vertical Component.	Before and after Perigee.	Variations of Vertical Component.	Before and after Apogee.	Variations of Vertical Component.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	0000	0	0132	0	0113	14	0081	7	0121	7	0064
16	0038	1	0086	1	0074	15	0035	6	0093	6	0101
17	0082	2	0092	2	0071	16	0045	5	0000	5	0060
18	0078	3	0086	3	0076	17	0093	4	0065	4	0049
19	0038	4	0080	4	0034	18	0065	3	0062	3	0051
20	0126	5	0113	5	0000	19	0027	2	0059	2	0093
21	0113	6	0102	6	0035	20	0074	1	0052	1	0058
22	0103	7	0124	7	0063	21	0022	P	0045	A	0070
23	0146	8	0110	8	0050	22	0018	1	0052	1	0114
24	0148	9	0119	9	0061	23	0088	2	0077	2	0133
25	0126	10	0030	10	0013	24	0004	3	0057	3	0085
26	0115	11	0074	11	0027	25	0063	4	0063	4	0092
27	0104	12	0033	12	0007	26	0057	5	0156	5	0102
28	0046	13	0039	13	0078	27	0087	6	0091	6	0109
29	0075	14	0026					7	0078	7	0086

This Table has been formed in the same manner as Table II., the rate of secular change employed being 0·001915 *per annum*, or = 0·0000052 *per diem*.

Variations of the Vertical Component with reference to the Moon's Age.—The means for this component present more irregularities than those for the horizontal component. The following are the means of groups :—

14 days to 16 days,	Full Moon,	0·000021		29 days to 1 day,	New Moon,	0·000091
17 ...... 20 ...		0·000081		2 ...... 5 days,		0·000093
21 ...... 24 ...		0·000127		6 ...... 9 ...		0·000114
25 ...... 28 ...		0·000098		10 ...... 13 ...		0·000041

The vertical component is a minimum at opposition, it is a maximum near the quadratures, and a secondary minimum at conjunction.

Variations of the Vertical Component with reference to the Moon's Declination.—The following are the means of groups of the second portion of Table XXXIX.

27 days to 1 day,	Moon farthest North,	0·000091	13 days to 15 days,	Moon farthest South,	0·000065
2 ...... 5 days,		0·000045	16 ...... 19 ...		0·000057
6 ...... 8 ...		0·000049	20 ...... 22 ...		0·000038
9 ...... 12 ...		0·000027	23 ...... 26 ...		0·000053

From these means the vertical component is a maximum when the moon has its greatest north declination; it is a secondary maximum when the moon is farthest south, and a minimum between these epochs.

TABLE XL.—Diurnal Range of the Vertical Component of Magnetic Force for each Civil Day, as deduced from the Hourly Observations, with the Mean for each Week in 1844.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
1	0317	1111	0302	2010	1535	0318	0349	1553	[1322]	6078	0424	[0436]
2	0606	1571	2773	2298	1036	[0259]	0340	1860	0457	1653	0511	0160
3	0269	0820	[2066]	1710	1637	0214	0352	1555	0432	0899	[0504]	0132
4	0584	[1002]	1876	1187	0239	0328	0442	[1048]	0875	0492	0597	0529
5	1144	1030	2597	0420	[1008]	0229	0298	0678	0379	0514	0367	0522
6	0675	0973	3232	1911	1095	0405	0215	0410	0369	[0491]	0630	0103
7	[0737]	0505	2498	[0736]	0194	0375	[0519]	0231	0536	0302	0150	0146
8	0733	1295	2837	0366	1549	0298	1170	0344	[0427]	0504	0261	[0218]
9	0625	0704	1550	0281	1902	[0427]	0549	2309	0338	0236	0260	0102
10	0662	0576	[1442]	0252	0676	0389	0441	0712	0623	0173	[0634]	0285
11	0207	[0523]	0318	0480	0394	0814	0319	[0735]	0315	0166	1200	0148
12	0225	0232	0884	0221	[0973]	0279	0347	0523	0261	0140	1604	0101
13	0223	0206	0567	0304	0420	0318	0589	0353	0216	0196	0332	0149
14	[0195]	0124	0134	[1196]	0409	0322	[0500]	0169	0634	0166	0581	2310
15	0114	0381	0233	0391	2039	0360	0514	0318	[0481]	0286	0180	[0602]
16	0157	0136	0158	0495	0777	[0520]	0580	0355	0368	0243	6560	0631
17	0245	0376	[0315]	5284	0422	1181	0654	0579	0852	0471	[1591]	0214
18	0463	[0248]	0483	0835	0265	0680	0878	[0342]	0557	0246	0743	0176
19	0169	0127	0514	0328	[0527]	0257	0225	0267	0305	0283	1219	0539
20	0201	0326	0368	0211	0249	0520	0303	0286	2274	[1541]	0266	1081
21	[0334]	0142	0106	[0445]	0512	0870	[0368]	0249	0902	6204	0256	1295
22	0591	0624	0186	0347	0910	0140	0240	1600	[0990]	1109	5668	[0582]
23	0387	0341	0228	0636	2794	[0183]	0337	2366	0447	0936	2555	0263
24	0189	0107	[0373]	0311	0467	0303	0227	1248	0558	0657	[1533]	0159
25	2178	[0392]	0320	2827	0593	0423	1454	[1093]	1454	1309	0418	0157
26	0245	0214	0285	2166	[0893]	0345	0719	0554	3858	2762	0151	0431
27	......	0285	0816	1860	0646	0381	0987	0363	1328	[1164]	0153	0328
28	[0746]	0783	0895	[1753]	0517	0312	[0789]	0429	1566	1354	1271	0212
29	0481	1615	1299	1005	0340	0460	0816	1704	[2997]	0641	0382	[0648]
30	0385		5495	1123	0208	[0366]	0306	2741	3505	0259	0142	1465
31	0439		[2284]		0255		0451	1723		0496		1057

Annual Variation of the Diurnal Ranges of the Vertical Component.—The following are the monthly means of the diurnal ranges :—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·00	0481	0584	1202	1164	0830	0433	0522	0944	0936	1058	1034	0489

The diurnal range is a minimum at the solstices and a maximum near the equinoxes.

When the means of the diurnal ranges are compared with the ranges of the mean diurnal variations (see Table XLIII.), we obtain the following quantities, excesses of the former :—

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·000	210	311	514	459	314	200	224	357	320	356	446	197

so that the causes which render the mean diurnal range greater than the range of the mean diurnal variation have their minimum effect at the solstices, and their maximum in March and November. The same result has been obtained for the horizontal component and magnetic declination.

TABLE XLI.—Means of the Diurnal Ranges of the Vertical Component of Magnetic Force, with reference to the Moon's Age, Declination, and Distance from the Earth, for 1844.

Moon's Age.	Mean Diurnal Range.	Moon's Age.	Mean Diurnal Range.	After Moon farthest North.	Mean Diurnal Range.	After Moon farthest North.	Mean Diurnal Range.	Before and after Perigee.	Mean Diurnal Range.	Before and after Apogee.	Mean Diurnal Range.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	1150	0	0748	0	0591	14	0591	7	0806	7	0880
16	1230	1	0488	1	0494	15	0678	6	0638	6	0754
17	1226	2	0513	2	0844	16	0417	5	1221	5	0996
18	1250	3	0366	3	0634	17	0963	4	0790	4	0765
19	1362	4	0385	4	1070	18	0793	3	0651	3	1228
20	0758	5	0589	5	1172	19	0919	2	0702	2	1541
21	0744	6	0448	6	0898	20	0835	1	0905	1	0945
22	0559	7	0457	7	0859	21	0995	P	0688	A	0877
23	0440	8	0867	8	0794	22	0785	1	0915	1	0441
24	0435	9	0980	9	0766	23	0800	2	0736	2	0524
25	0566	10	1309	10	0672	24	1189	3	0595	3	0523
26	0342	11	0888	11	0484	25	0868	4	0561	4	0577
27	0425	12	1491	12	0706	26	0928	5	1045	5	0604
28	0453	13	1197	13	0609	27	0650	6	0716	6	0826
29	0384	14	1334					7	0887	7	0904

Table XLI. has been formed from Table XL. in the manner described for Table II.

Variations of the Diurnal Range of the Vertical Component with reference to the Moon's Age.—The means in the first portion of Table XLI. shew that the diurnal range of the vertical component is a minimum about conjunction and a maximum about opposition. The following are means of groups:—

14 days to 16 days, Full Moon,	0·001238	29 days to 1 day, New Moon,	0·000540
17 ...... 20 ...	0·001149	2 ...... 5 days,	0·000463
21 ...... 24 ...	0·000544	6 ...... 9 ...	0·000688
25 ...... 28 ...	0·000446	10 ...... 13 ...	0·001221

Here also, as in the case of the horizontal component, there is an appearance of a secondary maximum at New Moon, but it is not by any means distinct.

Variations of the Diurnal Range of the Vertical Component with reference to the Moon's Declination.—This result is also well marked in the means in the second portion of Table XLI. The diurnal range of the vertical component is a minimum when the moon has its greatest north and south declination, and it is a maximum when the moon is near, but north of, the equator. The following are means of groups:—

27 days to 1 day, Moon farthest North,	0·000578	13 days to 15 days, Moon farthest South,	0·000626
2 ...... 5 days,	0·000930	16 ...... 19 ...	0·000773
6 ...... 8 ...	0·000850	20 ...... 22 ...	0·000872
9 ...... 12 ...	0·000657	23 ...... 26 ...	0·000946

TABLE XLII.—Hourly Means of the Micrometer Readings of the Balance Magnetometer, corrected for Temperature, 1844.

Mean Time. Gött.	Mean Time. Mak.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	h.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.
13	12	779·1	739·7	709·4	704·8	680·3	681·0	647·8	606·7	599·3	594·1	593·2	593·6	660·7
14	13	781·8	738·6	704·6	712·8	681·9	676·2	644·8	609·0	602·0	591·2	594·2	596·2	661·1
15	14	779·4	738·8	700·8	715·7	680·6	676·8	645·3	606·3	603·2	586·7	599·1	591·1	660·3
16	15	775·3	736·8	707·5	713·9	684·8	682·1	649·6	616·1	601·7	582·4	599·3	590·7	661·7
17	16	770·6	738·3	712·0	711·8	688·2	684·1	654·4	624·7	605·7	573·2	599·7	589·6	662·7
18	17	768·5	737·0	710·4	712·8	694·9	687·0	657·3	631·1	610·2	582·7	600·6	589·1	665·1
19	18	770·2	738·3	715·3	723·3	701·7	689·0	656·6	630·9	615·4	592·8	602·0	590·0	668·8
20	19	772·1	739·2	728·6	733·3	705·5	690·5	655·9	635·6	622·3	604·3	603·8	592·6	673·6
21	20	776·5	739·0	737·6	739·1	708·4	690·7	653·2	637·3	627·1	612·5	605·5	594·9	676·8
22	21	779·4	739·7	739·6	741·2	707·7	685·5	651·2	634·2	630·4	618·6	607·8	595·1	677·5
23	22	782·0	740·1	738·7	739·0	702·8	679·6	649·9	630·8	630·2	621·8	609·5	595·5	676·7
0	23	785·0	743·3	741·9	741·3	701·9	673·1	644·3	627·0	626·5	622·1	614·0	597·4	676·5
1	0	786·9	745·6	741·3	747·1	702·5	673·5	643·6	626·4	626·3	630·3	622·9	599·1	678·8
2	1	790·2	748·1	747·2	744·7	705·6	675·2	646·5	632·5	632·3	630·4	625·1	601·5	681·6
3	2	793·6	751·5	758·6	752·0	709·7	678·9	650·0	640·5	639·8	635·8	628·6	605·7	687·1
4	3	794·2	756·5	762·7	760·2	716·7	684·7	660·2	650·9	651·3	643·4	641·1	610·9	694·4
5	4	792·6	761·5	764·7	761·9	724·1	692·6	669·7	657·8	659·2	641·7	652·0	611·7	699·1
6	5	794·7	761·0	769·6	772·3	731·9	694·6	673·4	662·7	660·9	641·7	651·7	612·1	702·2
7	6	794·9	762·1	768·6	775·3	731·2	696·4	669·2	665·0	653·9	633·2	646·9	618·3	701·2
8	7	795·6	759·2	759·0	767·4	730·1	694·8	670·6	658·8	644·9	634·6	635·4	613·6	697·0
9	8	793·7	756·7	748·3	753·7	728·3	693·9	667·1	653·0	637·0	622·3	623·2	609·9	690·6
10	9	791·6	747·5	730·8	742·6	720·6	689·9	660·0	640·2	627·5	609·9	614·8	606·4	681·8
11	10	782·2	747·0	706·5	732·3	708·6	682·9	654·7	627·7	620·6	602·7	603·0	603·6	672·6
12	11	780·6	734·8	714·3	722·3	698·5	680·8	648·9	612·5	612·1	600·8	597·8	598·2	666·8

The true mean time at Makerstoun is 10^{m} in advance of the hours given in the second column of Table XLII.

TABLE XLIII.—Diurnal Variations of the Vertical Component of Magnetic Force in 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12	0106	0049	0086	0000	0000	0079	0042	0004	0000	0209	0000	0045	0004
13	0133	0038	0038	0080	0016	0031	0012	0027	0027	0180	0010	0071	0008
14	0109	0040	0000	0109	0003	0037	0017	0000	0039	0135	0059	0020	0000
15	0068	0020	0067	0091	0045	0090	0060	0098	0021	0092	0061	0016	0014
16	0021	0035	0112	0070	0079	0110	0108	0184	0064	0000	0065	0005	0024
17	0000	0022	0096	0080	0146	0139	0137	0248	0109	0095	0074	0000	0048
18	0017	0035	0145	0185	0214	0159	0130	0246	0161	0196	0088	0009	0085
19	0036	0044	0278	0285	0252	0174	0123	0293	0230	0311	0106	0035	0133
20	0080	0012	0368	0343	0281	0176	0096	0310	0278	0393	0123	0058	0165
21	0109	0049	0388	0364	0274	0124	0076	0279	0311	0454	0146	0060	0172
22	0135	0053	0379	0342	0225	0065	0063	0245	0309	0486	0163	0064	0163
23	0165	0085	0411	0365	0216	0000	0007	0207	0272	0489	0208	0083	0162
0	0184	0108	0405	0423	0222	0004	0000	0201	0270	0571	0297	0100	0185
1	0217	0133	0461	0399	0253	0021	0029	0262	0330	0572	0319	0124	0213
2	0251	0167	0578	0472	0294	0058	0061	0342	0405	0626	0354	0166	0267
3	0257	0217	0619	0554	0364	0116	0166	0446	0520	0702	0479	0218	0341
4	0241	0267	0639	0571	0438	0195	0261	0515	0599	0685	0588	0226	0388
5	0262	0262	0688	0675	0516	0215	0298	0564	0616	0685	0585	0230	0419
6	0264	0273	0678	0705	0509	0233	0256	0587	0546	0600	0537	0292	0409
7	0271	0244	0582	0626	0498	0217	0270	0525	0456	0614	0422	0245	0367
8	0252	0219	0475	0489	0480	0208	0235	0467	0377	0491	0300	0208	0303
9	0231	0127	0300	0378	0403	0168	0164	0339	0282	0367	0216	0173	0215
10	0137	0122	0057	0275	0283	0098	0111	0214	0213	0295	0098	0145	0123
11	0121	0000	0135	0175	0182	0077	0053	0062	0128	0276	0046	0091	0065

Diurnal Variation of the Vertical Component.—The following is the mean result for the year 1844:—The vertical component is a maximum at $5^h\ 20^m$ P.M., after which it diminishes with considerable rapidity till midnight, the principal minimum occurring about $1^h\ 30^m$ A.M.; it then increases till $9^h\ 10^m$ A.M, when it is a secondary maximum, becoming a secondary minimum at $10^h\ 40^m$ A.M., after which it increases to the principal maximum at 5^h P.M. The secondary maximum and minimum are distinctly marked, but the variation from the former to the latter is inconsiderable, being only 0·000010, while the variation from the principal maximum to the principal minimum is 0·000420, the whole vertical component being unity.

The form of the diurnal variation of the vertical component varies more with season than that of the diurnal variation for either of the elements already discussed. In winter the diurnal variation is single, the minimum occurring about 5^h A.M. and the maximum about 6^h P.M. In the months near the equinoxes the range of the variation is greatly increased, and its form is similar to that for the year given above; the secondary maximum and minimum become gradually more marked as the epoch approaches the summer solstice, till in the months of June and July the principal minimum occurs about noon, the range of the diurnal variation having diminished at the same time to nearly the same value as at the winter solstice. The following are the approximate times of maxima and minima in each month of the year, the principal maximum being indicated by + and minimum by −

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Max. P.M. +	7·10	6·10	5·10	6·10	5·10	6·10	5·10	6·10	5·10	3·10	4·30	6·10
Min. A.M. −	5·10	3·10	2·10	12·10	1·10	1·30	1·10 −	1·10	12·10	4·10	12·10	5·10
Max. A.M.	...	...	...	9·10	8·10	8·0	5·10	8·10	9·40	...	...	...
Min. A.M.	...	...	...	10·10	11·10 −	11·20	0·0	0·0	(0·50) P.M.		...	...

The principal maximum occurs earliest at the equinoxes: the principal minimum occurs farthest from midnight at the winter solstice and nearest it as we approach the summer solstice. The principal minimum actually occurs near noon at the summer solstice, but the minimum near midnight differs little in value.

Adopting the method already pursued (see page 339) for the purpose of considering the diurnal variation when freed as far as possible from the effects of irregular causes, the following Tables have been formed.

TABLE XLIV.—Hourly Means of the Balance Magnetometer Micrometer Readings for the Ten Days least disturbed in each Month of 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.
12	780·9	746·7	728·3	732·8	696·0	681·9	651·0	626·3	615·3	610·8	609·8	598·4	673·2
13	781·6	746·3	726·7	730·2	697·9	681·3	650·9	625·6	616·4	609·2	609·7	597·5	672·8
14	781·4	747·9	729·8	734·1	700·3	681·5	649·8	627·2	619·3	608·5	609·0	597·6	673·9
15	779·0	747·6	730·3	737·1	702·8	685·0	653·9	630·4	621·5	608·4	609·3	597·7	675·3
16	777·8	747·6	727·8	737·1	705·6	686·1	657·6	635·2	621·2	609·0	609·6	597·5	676·0
17	777·9	746·4	728·5	738·5	707·9	689·6	658·8	639·7	624·9	609·1	609·6	597·4	677·3
18	777·1	744·8	729·7	744·3	709·5	691·6	664·6	640·6	628·3	609·6	610·0	596·1	678·8
19	777·0	742·2	734·3	743·3	709·0	693·3	664·0	642·8	631·3	613·5	610·6	596·6	679·9
20	780·3	741·8	737·8	746·0	709·7	693·1	661·1	642·3	634·3	616·8	611·5	599·4	681·2
21	782·4	739·9	736·8	746·3	705·7	686·3	657·9	638·1	633·3	617·3	614·5	599·6	679·8
22	784·4	739·6	731·1	741·6	700·2	680·4	655·1	632·7	629·1	614·1	614·3	599·3	676·8
23	787·1	739·6	728·9	735·4	697·1	672·6	646·9	627·0	622·5	611·2	615·5	599·9	673·6
0	786·1	742·8	728·0	726·2	696·1	674·6	644·3	623·5	620·6	610·0	615·3	600·5	672·3
1	786·0	745·9	729·8	731·3	701·3	672·2	645·3	626·5	625·2	611·4	617·6	601·1	674·5
2	788·2	747·3	733·2	738·6	705·0	677·0	646·3	633·1	631·9	614·6	620·8	602·9	678·2
3	787·6	750·3	737·0	739·1	708·6	680·7	652·3	637·0	634·7	619·3	623·0	604·5	681·2
4	786·5	752·0	746·2	741·7	712·2	688·2	657·9	641·5	636·5	621·7	622·6	604·1	684·3
5	786·2	748·2	748·9	743·4	715·0	691·4	661·0	641·6	638·0	619·2	620·3	603·0	684·7
6	785·8	746·3	744·5	743·7	714·4	693·3	661·8	640·8	633·5	616·8	621·3	602·6	683·7
7	786·6	747·7	739·7	742·4	715·5	691·3	661·6	637·0	631·1	615·9	620·9	602·1	682·7
8	789·1	746·3	738·3	738·9	716·1	688·7	661·6	635·7	630·3	615·4	622·1	602·8	682·1
9	790·7	749·5	739·6	739·1	712·0	687·9	655·9	633·3	624·4	610·6	621·5	603·1	680·6
10	786·9	748·5	733·1	735·8	707·3	683·5	654·3	630·6	620·9	610·8	617·8	602·9	677·7
11	783·9	744·7	729·7	733·9	701·5	682·2	650·0	629·2	615·1	605·8	614·4	599·8	674·2

TABLE XLV.—Hourly Means of the Balance Magnetometer Micrometer Readings for the Five Days least disturbed in each Month of 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.
12	781·2	745·9	733·1	735·2	703·5	676·3	652·6	630·4	621·6	610·4	612·9	600·9	675·3
13	782·1	745·9	731·2	735·2	704·0	678·1	650·1	628·9	621·7	608·4	610·7	600·0	674·7
14	781·0	748·2	731·9	736·1	704·3	680·1	648·1	630·7	623·0	609·9	608·3	599·1	675·1
15	777·0	748·4	732·7	738·3	704·9	682·9	653·7	632·9	621·3	610·3	608·5	598·8	675·8
16	777·5	749·2	731·1	737·7	708·0	685·9	654·3	636·2	618·5	610·1	609·4	597·1	676·3
17	777·5	746·5	730·9	739·7	708·1	691·3	656·3	640·7	624·9	610·5	609·6	596·2	677·7
18	775·7	745·3	732·2	746·6	707·4	692·7	662·7	641·3	631·2	611·9	608·8	595·9	679·3
19	776·1	742·9	735·8	741·6	704·9	695·8	663·9	644·0	633·9	615·7	609·4	595·8	680·0
20	779·5	744·5	739·1	748·7	705·6	694·0	663·4	643·9	636·1	619·7	611·9	599·6	682·2
21	783·3	740·5	738·7	751·5	701·1	682·6	658·6	639·6	633·1	619·4	615·1	598·7	680·2
22	783·1	740·8	732·9	742·2	697·2	676·5	656·7	633·1	629·3	615·4	614·2	598·3	676·6
23	787·0	740·0	729·4	736·0	695·6	670·0	645·3	626·1	622·6	612·9	613·4	599·4	673·1
0	786·7	744·2	728·7	725·3	698·0	676·6	643·3	620·7	618·3	611·6	611·8	599·5	672·1
1	786·9	747·3	730·0	727·2	702·8	676·0	647·5	623·8	621·8	612·4	613·1	599·3	674·0
2	789·3	748·3	733·0	735·1	708·0	679·4	650·9	631·3	628·2	615·8	616·8	602·5	678·2
3	788·2	752·1	737·2	739·0	708·6	685·2	652·8	634·2	631·2	619·0	620·7	603·8	681·0
4	786·3	753·7	742·7	742·8	710·8	691·4	657·3	637·5	632·4	618·2	622·7	602·9	683·2
5	785·2	747·4	741·7	740·9	711·9	691·5	660·2	638·4	634·8	614·7	621·4	602·8	682·6
6	785·4	745·6	736·7	740·6	709·4	692·7	661·0	638·0	632·0	613·3	625·5	603·0	681·9
7	785·6	747·3	733·7	740·1	712·5	691·1	661·3	635·8	631·4	613·2	625·1	601·8	681·6
8	787·1	743·6	733·2	735·0	714·4	689·4	660·9	635·4	630·2	613·1	623·7	601·8	680·6
9	792·6	743·6	733·3	737·3	711·5	689·2	655·8	633·2	622·0	609·1	622·6	602·9	679·4
10	790·1	744·4	734·8	734·7	709·0	683·4	655·9	631·3	621·3	608·0	620·0	604·1	678·1
11	786·3	744·2	734·0	733·9	705·0	681·6	651·5	630·3	618·7	606·2	615·6	602·5	675·8

These Tables give very remarkable results, the means for the 10 days and for the 5 days selected agree very nearly with each other, but they differ very considerably in some cases from the means of the whole observations. Considering at first the mean of the 60 days representing the mean for the year, free or nearly free from intermittent disturbances, we find that the diurnal variation consists of two nearly equal maxima and two nearly equal minima; the principal of the former occurs at $4^h\ 10^m$ P.M. and the other at $8^h\ 10^m$ A.M., while the principal minimum occurs at noon and the secondary minimum at $1^h\ 10^m$ A.M. The mean for the 120 days differs from that for the 60 days, only in placing the principal maximum an hour later, namely, at $5^h\ 10^m$ P.M. The effect of the intermittent disturbances therefore is nearly to efface what is really the principal minimum and to exaggerate what is only a secondary minimum; the range of the mean diurnal variation when freed from the effect of disturbances is little more than *a fourth* of that obtained from the whole series of observations. When the non-disturbed variations for the different months are examined, it is at once apparent that the matters which have been noted as remarkable in the total results are chiefly or altogether due to disturbances; in fact, the diurnal variation consists in the eight months from March till October of two maxima and two minima, and resembles generally the result for the year, the earlier maximum being at times the principal. The variation in the four winter months differs somewhat from that for the other months, being more like a single variation; there are, however, some differences which may be accidental, but which will be considered in connection with the observations for 1845. The following Table contains the approximate epochs of the singular points for each month, the principal are indicated by + and −

TABLE XLVI.—Epochs of Diurnal Maxima and Minima of the Vertical Component of Magnetic Force, obtained from the selected series of observations, 1844.

Month.	10-Day Series.				5-Day Series.			
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
Jan.	− 6·10 A.M.	2·10 P.M.	6·10 P.M.	+9·10 P.M.	− 6·40 A.M.	2·10 P.M.	5·40 P.M.	+ 9·10 P.M.
Feb.	−10·10 ...	+4·10 ...	{ 6·30 ... 11·10 ...	{ 9·10 ... 3·0 A.M.	−11·10 ...	+4·10 ...	9·0 ...	4·10 A.M.
March	0·10 P.M.	+5·10 ...	− 1·10 A.M.	8·10 ...	− 0·10 P.M.	+4·20 ...	3·10 A.M.	8·20 ...
April	− 0·10 ...	5·40 ...	1·10 ...	+8·40 ...	− 0·20 ...	4·10 ...	11·10 P.M.	+ 9·10 ...
May	0·10 ...	+8·0 ...	−12·10 ...	7·10 ...	−11·10 A.M.	+8·10 ...	12·10 ...	4·40 ...
June	− 0·10 ...	+6·10 ...	1·10 ...	+7·40 ...	−11·10 ...	6·10 ...	12·10 ...	+ 7·10 ...
July	− 0·10 ...	6·40 ...	1·10 ...	+6·30 ...	− 0·10 P.M.	7·10 ...	2·10 A.M.	+ 7·40 ...
Aug.	− 0·10 ...	4·40 ...	1·10 ...	7·10 ...	− 0·10 ...	5·30 ...	1·10 ...	+ 7·40 ...
Sept.	0·10 ...	+5·10 ...	−11·50 P.M.	8·10 ...	− 0·10 ...	5·10 ...	−2·10 ...	+ 8·10 ...
Oct.	− 0·10 ...	+4·10 ...	−11·10 ...	9·0 ...	0·10 ...	+3·40 ...	11·10 P.M.	+ 8·40 ...
Nov.	− 3·0 A.M.	+3·10 ...	6·0 ...	8·30 P.M.	0·10 ...	+6·30 ...	−3·10 A.M.	9·10 ...
Dec.	− 6·10 ...	+3·40 ...	7·10 ...	9·10 ...	− 6·40 A.M.	3·10 ...	6·40 P.M.	+10·10 P.M.

The principal maximum is indicated by + and the principal minimum by — ; the differences, however, between the values of the principal and secondary points are small, excepting perhaps for the months of December, January, and February. The epochs for the 10-day series are the most consistent, 5 days are probably too few for consistent results, especially in the present case, where the days were selected chiefly as being free from irregularities for the magnetic declination.

Ranges of the Mean Diurnal Variations.—The following are the ranges of the monthly mean diurnal variations, as deduced from all the hourly observations, and from the hourly observations on the 10 days and on the 5 days selected as least affected by disturbances :—

		Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
All, .	0·000	271	273	688	705	516	233	298	587	616	702	588	292	419
10 days,	0·000	137	124	222	201	201	211	204	194	229	159	140	084	124
5 days,	0·000	169	137	140	262	188	258	206	233	177	135	171	083	111

The range of the diurnal variation from *all* the observations is a minimum at the solstices, and it is a maximum at the equinoxes, being three times greater at the latter than at the summer solstice. When we consider the range of the diurnal variation nearly unaffected by intermittent disturbances, as deduced from 10 days selected, we find a totally different result, as in the case of the other elements discussed the diurnal range has a nearly constant value during the months for which the sun is north of the equator. The excess, therefore, of the range at the equinoxes from all the observations, is due solely to disturbances, which, as has been shewn in the previous discussions, are a maximum at these epochs. The ranges from the 5 days selected are perhaps less accurate, owing to the fewness of the observations from which they are obtained.

TABLE XLVII.—Mean Variations of the Vertical Component of Magnetic Force, with reference to the Moon's Hour-Angle for each Lunation, for the Six Winter and Six Summer Lunations, and for the Twelve Lunations, of 1844.

Moon's Hour-Angle.	Lunations.														
	1st.	2d.	3d.	4th.	5th.	6th.	7th.	8th.	9th.	10th.	11th.	12th.	Winter.	Summer.	Year.
h.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
0	0061	0004	0139	0282	0035	0126	0055	0089	0018	0117	0079	0047	0025	0062	0035
1	0096	0029	0057	0130	0060	0140	0045	0071	0004	0000	0095	0069	0008	0031	0011
2	0065	0057	0031	0078	0087	0127	0026	0069	0009	0002	0043	0129	0005	0022	0005
3	0053	0084	0035	0085	0106	0128	0017	0060	0000	0054	0000	0071	0000	0022	0003
4	0052	0097	0000	0020	0110	0126	0043	0065	0004	0135	0020	0058	0011	0018	0006
5	0034	0119	0080	0000	0094	0119	0081	0038	0026	0173	0023	0028	0027	0016	0013
6	0028	0105	0045	0037	0081	0080	0078	0018	0042	0204	0050	0011	0024	0012	0010
7	0005	0038	0103	0082	0078	0061	0062	0000	0019	0128	0080	0006	0010	0007	0000
8	0027	0046	0170	0067	0000	0055	0071	0033	0035	0123	0069	0005	0024	0000	0003
9	0019	0075	0166	0058	0042	0043	0062	0046	0014	0172	0083	0000	0036	0001	0010
10	0024	0090	0195	0035	0085	0075	0072	0081	0033	0235	0110	0022	0063	0020	0033
11	0038	0127	0286	0054	0110	0070	0045	0095	0040	0298	0103	0047	0100	0025	0054
12	0016	0132	0346	0047	0071	0055	0005	0090	0063	0396	0124	0078	0132	0012	0063
13	0000	0163	0438	0065	0090	0000	0000	0106	0088	0421	0152	0097	0163	0015	0080
14	0020	0159	0460	0101	0119	0038	0033	0077	0112	0541	0176	0106	0194	0036	0107
15	0056	0172	0489	0109	0101	0045	0054	0101	0098	0475	0196	0093	0197	0041	0111
16	0056	0182	0135	0144	0078	0043	0071	0144	0173	0509	0177	0084	0191	0065	0119
17	0062	0169	0426	0185	0049	0040	0075	0150	0220	0458	0163	0064	0174	0076	0117
18	0085	0080	0298	0092	0063	0019	0084	0140	0223	0334	0159	0078	0123	0060	0083
19	0100	0109	0325	0073	0037	0030	0082	0053	0210	0338	0254	0078	0151	0037	0086
20	0089	0078	0231	0083	0033	0033	0075	0045	0201	0318	0258	0071	0125	0035	0071
21	0089	0085	0246	0134	0065	0038	0059	0049	0168	0310	0337	0059	0138	0042	0081
22	0091	0019	0176	0165	0046	0050	0070	0067	0138	0286	0334	0060	0111	0046	0070
23	0084	0000	0130	0120	0082	0075	0060	0111	0097	0016	0327	0061	0058	0047	0044
24	0056	0009	0135	0150	0078	0100	0055	0127	0049	0101	0351	0055	0068	0050	0050

Diurnal Variation with reference to the Moon's Hour-Angle.—Considering the variations for the six winter lunations, the six summer lunations, and for the year, as given in the last three columns of Table XLVII.

In the winter group, the maximum of the vertical component occurs about $2\frac{1}{2}$ hours after the moon's transit of the inferior meridian, and the minimum about 3 hours after its transit of the superior meridian.

In the summer group, there are two maxima and two minima; the principal minimum occurs 4 hours before the moon's inferior transit, and the principal maximum occurs $4\frac{1}{4}$ hours after the inferior transit; a secondary minimum occurs about $4\frac{1}{2}$ hours before the superior transit, and a secondary maximum at the superior transit.

In the mean of the 12 lunations in 1844, the maximum occurs $3\frac{1}{2}$ hours after the inferior transit, and the minimum occurs 7 hours after the superior transit. There is a secondary maximum immediately before this epoch, but it is not well marked. The remarks already made for the similar discussion of the horizontal component also apply here. In order to eliminate the effect of disturbances, those observations were rejected in the summations, which were considerably disturbed, differing from the monthly means at the corresponding hours by more than 50 micrometer divisions ($=0{\cdot}000500$), quantities interpolated from the preceding and succeeding observations having been substituted. The following are the resulting variations at intervals of $\frac{24}{25}$ of an hour:—

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0·0000	37	31	29	22	17	20	06	00	04	12	24	32	47	59	73	77	83	70	58	43	40	39	34	39	36

The maximum occurs about 2 hours after the moon's passage of the inferior meridian, and the minimum 7 hours after the superior transit; there is an ill-defined minimum about 3 hours before the superior transit, and maximum at the superior transit.

TABLE XLVIII.—Differences between the Hourly Means of Balance Micrometer Readings for the whole series in each Month, and those for the selected Ten Days; or Table XLII. *minus* Table XLIV.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.
12	-1·8	-7·0	-18·9	-28·0	-15·7	-0·9	-3·2	-19·6	-16·0	-16·7	-16·6	-4·8	-12·5
13	+0·2	-7·7	-22·1	-17·4	-16·0	-5·1	-6·1	-16·6	-14·4	-18·0	-15·5	-1·3	-11·7
14	-2·0	-9·1	-29·0	-18·4	-19·7	-4·7	-4·5	-20·9	-16·1	-21·8	-9·9	-6·5	-13·6
15	-3·7	-10·8	-22·8	-23·2	-18·0	-2·9	-4·3	-14·3	-19·8	-26·0	-10·0	-7·0	-13·6
16	-7·2	-9·3	-15·8	-25·3	-17·4	-2·0	-3·2	-10·5	-15·5	-35·8	-9·9	-7·9	-13·3
17	-9·4	-9·4	-18·1	-25·7	-13·0	-2·6	-1·5	-8·6	-14·7	-26·4	-9·0	-8·3	-12·2
18	-6·9	-6·5	-14·4	-21·0	-7·8	-2·6	-8·0	-9·7	-12·9	-16·8	-8·0	-6·1	-10·0
19	-4·9	-3·0	-5·7	-10·0	-3·5	-2·8	-8·1	-7·2	-9·0	-9·2	-6·8	-4·0	-6·3
20	-3·8	-2·8	-0·2	-6·9	-1·3	-2·4	-7·9	-5·0	-7·2	-4·3	-6·0	-4·5	-4·4
21	-3·0	-0·2	+2·8	-5·1	+2·0	-0·8	-6·7	-3·9	-2·9	+1·3	-6·7	-4·5	-2·3
22	-2·4	+0·5	+7·6	-2·6	+2·6	-0·8	-5·2	-1·9	+1·1	+7·7	-4·8	-3·8	-0·1
23	-2·1	+3·7	+13·0	+5·9	+4·8	+0·5	-2·6	0·0	+4·0	+10·9	-1·5	-2·5	+2·9
0	+0·8	+2·8	+13·3	+20·9	+6·4	-1·1	-0·7	+2·9	+5·7	+20·3	+7·6	-1·4	+6·5
1	+4·2	+2·2	+17·4	+13·4	+4·3	+3·0	+1·2	+6·0	+7·1	+19·0	+7·5	+0·4	+7·1
2	+5·4	+4·2	+25·4	+13·4	+4·7	+1·9	+3·7	+7·4	+7·9	+21·2	+7·8	+2·8	+8·9
3	+6·6	+6·2	+25·7	+21·1	+8·1	+4·0	+7·9	+13·9	+16·6	+24·1	+18·1	+6·4	+13·2
4	+6·1	+9·5	+18·5	+20·2	+11·9	+4·4	+11·8	+16·3	+22·7	+20·0	+29·4	+7·6	+14·8
5	+8·5	+12·8	+20·7	+28·9	+16·9	+3·2	+12·4	+21·1	+22·9	+22·5	+31·4	+9·1	+17·5
6	+9·1	+15·8	+24·1	+31·6	+16·8	+3·1	+7·4	+24·2	+20·4	+16·4	+25·6	+15·7	+17·5
7	+9·0	+11·5	+19·3	+25·0	+14·6	+3·5	+9·0	+21·8	+13·8	+18·7	+14·5	+11·5	+14·3
8	+4·6	+10·4	+10·0	+14·8	+12·2	+5·2	+5·5	+17·3	+6·7	+6·9	+1·1	+7·1	+8·5
9	+0·9	-2·0	-8·8	+3·5	+8·6	+2·0	+4·1	+6·9	+3·1	-0·7	-6·7	+3·3	+1·2
10	-4·7	-1·5	-26·6	-3·5	+1·3	-0·6	+0·4	-2·9	-0·3	-8·1	-14·8	+0·7	-5·1
11	-3·3	-9·9	-15·4	-11·6	-3·0	-1·4	-1·1	-16·7	-3·0	-5·0	-16·6	-1·6	-7·4

TABLE XLIX.—Differences between the Hourly Means of Balance Micrometer Readings for the whole series in each Month, and those for the selected Five Days; or Table XLII. *minus* Table XLV.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.
12	-2·1	-6·2	-23·7	-30·4	-23·2	+4·7	-4·8	-23·7	-22·3	-16·3	-19·7	-7·3	-14·6
13	-0·3	-7·3	-26·6	-22·8	-22·1	-1·9	-5·3	-19·9	-19·7	-17·2	-16·5	-3·8	-13·6
14	-1·6	-9·4	-31·1	-20·4	-23·7	-3·3	-2·8	-24·4	-19·8	-23·2	-9·2	-8·0	-14·8
15	-1·7	-11·6	-25·2	-24·4	-20·1	-0·8	-4·1	-16·8	-19·6	-27·9	-9·2	-8·1	-14·1
16	-6·9	-10·9	-19·1	-25·9	-19·8	-1·8	+0·1	-11·5	-12·8	-36·9	-9·7	-7·5	-13·6
17	-9·0	-9·5	-20·5	-26·9	-13·2	-4·3	+1·0	-9·6	-14·7	-27·8	-9·0	-7·1	-12·6
18	-5·5	-7·0	-16·9	-23·3	-5·7	-3·7	-6·1	-10·4	-15·8	-19·1	-6·8	-5·9	-10·5
19	-4·0	-3·7	-7·2	-8·3	+0·6	-5·3	-8·0	-8·4	-11·6	-11·4	-5·6	-3·2	-6·4
20	-3·0	-5·5	-1·5	-9·6	+2·8	-3·3	-10·2	-6·6	-9·0	-7·2	-6·4	-4·7	-5·4
21	-3·9	-0·8	+0·9	-10·3	+6·6	+2·9	-7·4	-5·4	-2·7	-0·8	-7·3	-3·6	-2·7
22	-1·1	-0·7	+5·8	-3·2	+5·6	+3·1	-6·8	-2·3	+0·9	+6·4	-4·7	-2·8	+0·1
23	-2·0	+3·3	+12·5	+5·3	+6·3	+3·1	-1·0	+0·9	+3·9	+9·2	+0·6	-2·0	+3·4
0	+0·2	+1·4	+12·6	+21·8	+4·5	-3·1	+0·3	+5·7	+8·0	+18·7	+11·1	-0·4	+6·7
1	+3·3	+0·8	+17·2	+17·5	+2·8	-0·8	-1·0	+8·7	+10·5	+18·0	+12·0	+2·2	+7·6
2	+4·3	+3·2	+25·6	+16·9	+1·7	-0·5	-0·9	+9·2	+11·6	+20·0	+11·8	+3·2	+8·9
3	+6·0	+4·4	+25·5	+21·2	+8 1	-0·5	+7·4	+16·7	+20·1	+24·4	+20·4	+7·1	+13·4
4	+6·3	+7·8	+22·0	+19·1	+13·3	+1·2	+12·4	+20·3	+26·8	+23·5	+29·3	+8·8	+15·9
5	+9·5	+13·6	+27·9	+31·4	+20·0	+3·1	+13·2	+24·3	+26·1	+27·0	+30·3	+9·3	+19·6
6	+9·5	+16·5	+31·9	+34·7	+21·8	+3·7	+8·2	+27·0	+21·9	+19·9	+21·4	+15·3	+19·3
7	+10·0	+11·9	+25·3	+27·3	+17·6	+3·7	+9·3	+23·0	+13·5	+21·4	+10·3	+11·8	+15·4
8	+6·6	+13·1	+15·1	+18·7	+13·9	+4·5	+6·2	+17·6	+6·8	+9·2	-0·5	+8·1	+10·0
9	-1·0	+3·9	-2·5	+5·3	+9·1	+0·7	+4·2	+7·0	+5·5	+0·8	-7·8	+3·5	+2·4
10	-7·9	+2·6	-28·3	-2·4	-0·4	-0·5	-1·2	-3·6	-0·7	-5·3	-17·0	-0·5	-5·5
11	-5·7	-9·4	-19·7	-11·6	-6·5	-0·8	-2·6	-17·8	-6·6	-5·4	-17·8	-4·3	-9·0

INTERMITTENT DISTURBANCES.

Effect of Intermittent Disturbances on the Yearly Mean of the Vertical Component.—Performing discussions similar to those already made for the magnetic declination and horizontal component, we find the means of the vertical component as deduced from different series of days as follow, the value at 0 micrometer divisions being unity:—

Mean vertical component for 1844, as deduced from the 120 days, greater than that from the whole series by	0·000021
.... 60	0·000015

The effect of disturbances, therefore, in 1844, was to diminish the mean value of the vertical component, as well as of the horizontal component.

Effect of Disturbances on the Monthly Means of the Vertical Component.—The corrections of the means from the 10-day and 5-day series selected in each month, to those from the complete series, are, in micrometer divisions, as follow:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
10 days,	−3·9	+9·6	−12·4	+0·3	−7·1	− 3·1	−3·1	−2·0	−4·8	−4·3	+0·6	+5·1
5 days,	−2·4	+10·5	−12·1	−1·1	−3·4	−10·6	−3·1	−0·1	−2·6	−2·3	+0·8	+7·2

These quantities oscillate considerably; taking the mean of each three in order to eliminate the irregularities, we have—

10 days,	+3·6	−2·2	−0·8	−6·4	−3·3	−4·4	−2·8	−3·3	−3·7	−2·8	+0·5	+1·9
5 days	+5·1	−1·3	−0·9	−5·5	−5·0	−5·7	−4·6	−2·0	−1·7	−1·4	+1·9	+1·9

From whence it appears, that the maximum effect of disturbances, to diminish the monthly mean, occurs about May, and the maximum effect, to increase the monthly mean, about January. The differences of the means from the selected and complete series, are evidently partially due to the secular change, the means of the selected series not corresponding to the middle of the month; the error due to this cause, however, does not affect the above result to any marked extent.

Effect of Disturbances on the Hourly Means of the Vertical Component.—Considering, first, the differences of the hourly means for the year, as obtained from a comparison of the whole series with the 60-day series of observations (see last column of Table XLIX.), we obtain the following results:—

The mean effect of disturbances upon the hourly means of the vertical component, is a positive maximum at 5^h 30^m P.M.; it is a negative maximum about 2^h A.M., and it is zero at 10^h A.M., and near 10^h P.M. The comparison of the whole series with the 120-day series (see last column of Table XLVIII.) gives exactly the same result.

The times for the maximum effect of disturbance on the hourly means of the vertical component, are about $1\frac{1}{2}$ hours after those for the horizontal component.

The greatest effects of disturbance in increasing and diminishing the hourly means of the vertical component for the year 1844, as deduced from the comparisons with the 60-day series of observations, are as follow:—

Maximum effect in increasing the vertical component	(5^h 30^m P.M.)..................	=0·000196
.... diminishing	(2^h A.M.)......................	=0·000148

As the whole diurnal range in the mean for the year from the whole series of observations is 0·000419, the effect of disturbance is greater on this component than on either of the other elements already discussed, being from about $+\frac{1}{2}$ to $-\frac{1}{3}$ of the whole range.

The differences for each month from both series of comparisons, give, with slight variation, the same times of maximum and minimum effect, the amount being greatest at the equinoxes.

The following are the differences between the hourly means for the 120-day series, and those for the 60-day series, or means for 120 days *minus* means for 60 days. (See last columns of Tables XLIV. and XLV.)

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
−2·1	−1·9	−1·2	−0·5	−0·3	−0·4	−0·5	−0·1	−1·0	−0·4	+0·2	+0·5	+0·2	+0·5	0·0	+0·2	+1·1	+2·1	+1·8	+1·1	+1·5	+1·2	−0·4	−1·6

These differences give the same law as the differences discussed above. The maximum positive effect occurs about $5\frac{1}{2}^{h}$ P.M., and the maximum negative about 1^{h} A.M.; whence, as in the analogous discussions for the magnetic declination and horizontal component, we may conclude that the smallest and largest disturbances obey the same diurnal law. (See pp. 345 and 368.)

Differences of the Individual Observations from the Monthly Means for the Corresponding Hours.—Adopting the process already indicated for the magnetic declination, p. 346, we obtain the following Table:—

TABLE L.—Mean Difference of a Single Observation of the Balance Magnetometer from the Monthly Mean, at the corresponding hour, for each Civil Day and Week in 1844.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.
1	15·6	32·6	24·3	24·9	23·1	6·6	6·5	31·5	[18·9]	132·9	13·2	[12·4]
2	17·7	30·5	40·5	30·6	15·4	[15·1]	11·2	19·2	14·5	35·2	14·5	9·2
3	12·6	19·2	[32·6]	19·3	27·0	19·6	9·5	18·4	13·1	21·8	[14·5]	7·7
4	12·1	[23·0]	24·2	12·9	33·0	14·6	11·6	[17·9]	14·9	21·8	13·0	11·5
5	18·2	23·5	28·2	9·4	[23·9]	18·2	10·6	9·9	10·9	21·4	12·5	11·3
6	10·6	18·7	55·9	29·9	18·9	14·6	8·6	11·1	16·9	[19·3]	14·7	5·4
7	[12·8]	13·3	50·5	[18·1]	21·0	13·9	[14·1]	17·2	18·2	19·1	16·4	6·7
8	14·0	22·5	35·5	19·8	28·2	11·0	23·7	17·2	[16·0]	14·3	17·9	[8·2]
9	11·3	12·5	17·4	18·3	29·6	[10·5]	16·5	34·0	17·2	17·6	10·9	7·5
10	10·9	11·7	[27·7]	18·2	20·6	5·5	13·5	10·1	14·1	19·7	[15·2]	7·9
11	8·3	[11·6]	18·5	12·0	28·8	12·7	12·2	[16·5]	19·0	18·7	20·5	10·6
12	7·2	7·1	26·4	14·9	[23·2]	5·2	6·6	10·7	14·5	16·3	14·0	14·7
13	7·5	5·8	17·8	25·2	16·2	8·6	11·5	14·5	14·0	[17·0]	11·5	12·8
14	[7·9]	10·0	24·7	[32·3]	12·5	6·6	[11·1]	12·3	9·1	17·9	9·5	34·9
15	9·3	24·0	20·0	16·8	31·8	16·7	13·4	16·0	[12·7]	13·6	14·4	[14·8]
16	7·4	14·5	25·0	15·3	9·7	[11·2]	12·0	12·7	15·3	15·7	97·2	12·4
17	7·7	23·2	[21·3]	109·8	11·1	13·0	10·7	8·0	14·5	11·8	[29·3]	7·5
18	6·1	[17·8]	20·0	23·3	19·8	13·8	10·2	[12·5]	8·8	15·4	17·0	6·8
19	12·0	19·7	17·1	16·2	[14·0]	8·8	4·2	13·7	11·4	14·4	19·5	10·1
20	6·6	13·0	21·2	16·9	16·2	12·1	10·6	13·4	36·4	[25·8]	18·5	15·0
21	[7·4]	12·4	15·1	[18·4]	13·5	19·0	[8·3]	11·5	14·7	93·1	11·8	25·0
22	7·3	12·9	18·7	15·3	13·8	7·9	9·0	23·2	[17·1]	9·3	44·5	[11·7]
23	8·4	9·1	17·3	19·2	47·7	[16·6]	9·9	34·1	10·8	10·7	40·6	5·9
24	3·8	9·7	[19·0]	19·5	11·5	10·3	5·8	15·6	12·9	11·7	[22·5]	7·5
25	37·2	[9·2]	18·7	22·7	11·8	21·9	27·0	[18·5]	16·5	12·8	11·5	6·4
26	12·9	6·9	19·7	16·5	[21·0]	28·4	14·7	11·2	77·6	39·6	12·3	7·6
27	......	7·6	24·7	26·6	22·0	24·6	18·5	10·0	18·3	[17·9]	14·5	12·7
28	[20·8]	8·8	17·2	[19·6]	17·1	22·1	[23·5]	16·5	20·6	15·8	19·0	5·6
29	14·7	22·6	28·4	14·6	16·2	23·2	22·8	19·8	[54·7]	13·0	11·7	[16·7]
30	17·7		137·4	13·9	16·4	[16·2]	22·9	33·9	43·5	14·2	15·0	33·3
31	21·5		[43·0]		15·1		34·8	17·4		18·9		24·3

Annual Variation of the Mean Difference for the Vertical Component.—The average difference of an observation in each month, from the monthly mean at the corresponding hour, is as follows, in parts of the vertical component.

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·000	123	157	294	224	203	144	137	172	191	247	199	123

These quantities give the same annual law as the similar discussions of the two other elements. The maximum disturbance of the vertical component occurs near the equinoxes, and the minimum near the solstices. The effect of disturbance is greatest on the means for this component; the amount of disturbance of the individual observations (independently of sign), is also much the greatest for the vertical component; the average difference of a single observation from the monthly mean for the corresponding hour is from $\frac{1}{2}$ to $\frac{1}{3}$ of the mean diurnal range as deduced from the whole series of observations for each month of the year.

The mean difference of an observation of the vertical component for the year 1844 = 0·000184.

TABLE LI.—Mean Difference of a Single Observation of the Balance Magnetometer from the Monthly Mean, at the corresponding hour, with reference to the Moon's Age, Declination, and Distance from the Earth, for 1844.

Moon's Age.	Mean Difference.	Moon's Age.	Mean Difference.	After Moon farthest North.	Mean Difference.	After Moon farthest North.	Mean Difference.	Before and after Perigee.	Mean Difference.	Before and after Apogee.	Mean Difference.
Day.	Mic. Div.	Day.	Mic. Div.	Day.	Mic. Div.	Day.	Mic. Div.	Day.	Mic. Div.	Day.	Mic. Div.
15	18·9	0	22·0	0	16·8	14	16·7	7	17·3	7	20·4
16	21·8	1	15·5	1	15·3	15	16·1	6	15·3	6	17·2
17	24·9	2	13·3	2	18·7	16	17·1	5	27·4	5	22·9
18	21·3	3	12·6	3	16·7	17	22·0	4	18·2	4	14·4
19	27·7	4	12·7	4	21·0	18	19·8	3	16·0	3	18·9
20	17·8	5	15·2	5	25·3	19	23·6	2	15·6	2	29·7
21	16·6	6	24·6	6	18·5	20	18·5	1	20·2	1	18·1
22	15·7	7	14·8	7	15·6	21	20·0	P	17·2	A	22·1
23	15·7	8	16·4	8	18·6	22	15·9	1	16·7	1	14·8
24	14·3	9	18·3	9	16·8	23	25·0	2	17·9	2	16·5
25	16·2	10	24·9	10	15·2	24	22·8	3	15·3	3	14·4
26	12·9	11	17·5	11	14·2	25	17·6	4	16·7	4	16·0
27	16·1	12	29·9	12	17·2	26	22·6	5	24·5	5	16·5
28	15·4	13	23·6	13	15·9	27	19·1	6	18·4	6	17·7
29	14·4	14	25·0					7	19·9	7	20·0

This Table has been formed from Table L., in the manner already described for Table II.

Variation of the Mean Difference with respect to the Moon's Age.—From the first portion of Table LI., it appears that the mean difference is a maximum about opposition, and a minimum about conjunction. The following are means of groups:—

	Mic. Div.		Mic. Div.
14 days to 16 days, Full Moon, ...	21·9	29 days to 1 day, New Moon, ...	17·3
17 .... 20	22·9	2 .... 5 days,	13·4
21 .... 24	15·6	6 .... 9	18·5
25 .... 28	15·1	10 .... 13	24·0

The law is the same as that already found for the horizontal component; there is a secondary maximum at conjunction, minima occurring immediately before and after it; and there is a secondary minimum at opposition, the maxima occurring immediately before and after it: these secondary points are perhaps accidental.

The average difference for the 11 days (10—20), including Full Moon, . =23·0 Mic. Div.
.... (25—5), ... New Moon, . =15·1 ......

Variation of the Mean Difference with reference to the Moon's Declination.—The average difference is a minimum when the moon has its greatest north and south declination, and it is a maximum between these epochs when the moon is near the equator. The following are means of groups:—

	Mic. Div.		Mic. Div.
27 days to 1 day, Moon farthest North,...	17·1	13 days to 15 days, Moon farthest South,...	16·2
2 .... 5 days,	20·4	16 .... 19	20·6
6 .... 8	17·6	20 .... 22	18·1
9 ....12	15·8	23 .... 26	22·0

These means still present some irregularities; the principal minimum occurs when the moon is farthest south.

TABLE LII.—Mean Difference of a Single Observation of the Balance Magnetometer from the Monthly Mean, at the corresponding hour, for each Hour in each Month of 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.
12	13·6	12·6	46·5	33·8	33·7	13·2	12·3	29·7	31·8	27·3	22·6	13·7	24·2
13	12·9	10·9	50·9	23·6	31·7	18·2	15·7	24·8	29·5	27·3	19·7	13·8	23·2
14	11·2	10·5	60·8	24·3	30·3	18·4	13·1	27·4	28·0	33·3	13·7	8·4	23·3
15	12·0	14·3	50·3	29·8	31·0	15·8	11·6	20·4	30·9	39·0	13·6	8·9	23·1
16	15·1	13·6	41·5	31·3	30·3	13·0	11·5	14·2	26·7	56·3	13·0	9·0	23·0
17	18·5	15·0	43·5	32·1	25·3	16·7	11·7	12·0	23·9	43·8	11·7	9·4	22·0
18	16·3	14·0	36·5	24·7	21·1	15·9	15·9	13·4	22·1	30·8	11·5	10·6	19·4
19	14·0	11·9	23·8	15·1	18·6	14·6	14·7	10·2	18·2	21·6	10·5	10·1	15·3
20	11·9	10·7	15·1	13·0	17·5	14·3	15·3	8·1	14·7	16·0	10·4	9·6	13·0
21	11·5	12·4	11·3	11·4	17·3	13·3	14·3	6·4	12·0	11·7	11·7	9·6	11·9
22	12·3	13·6	9·8	9·6	16·0	12·5	12·8	7·7	11·0	13·3	11·1	9·4	11·6
23	11·1	16·0	12·3	13·4	15·0	14·8	13·9	10·9	8·3	13·4	12·3	9·1	12·5
0	8·4	15·1	13·5	29·2	14·2	13·9	12·8	12·1	9·7	23·8	20·5	9·3	15·2
1	9·6	14·3	17·2	19·0	13·4	12·8	12·7	13·3	10·6	21·7	19·3	10·4	14·5
2	11·0	16·3	21·7	19·6	14·0	13·1	10·9	12·2	11·3	22·2	17·6	11·7	15·4
3	12·0	18·1	24·9	27·4	14·5	13·8	15·8	19·5	19·8	26·3	31·3	16·9	20·0
4	10·4	22·9	21·5	25·0	19·9	15·2	17·4	26·8	27·1	22·5	43·7	18·4	22·6
5	12·4	25·6	23·0	34·9	22·9	15·7	18·4	26·9	30·3	27·3	45·9	17·8	25·1
6	11·9	27·5	22·5	37·9	21·9	14·8	15·4	29·4	25·0	16·6	36·3	27·6	23·9
7	13·2	22·2	15·7	27·6	17·1	12·2	16·2	23·6	17·1	21·0	23·4	20·9	19·2
8	11·6	20·2	15·4	16·4	14·7	13·1	12·8	17·7	8·9	16·9	11·8	15·7	14·6
9	12·2	12·8	30·2	11·6	14·5	13·0	10·2	11·6	10·3	19·0	15·0	11·2	14·3
10	10·6	12·1	55·4	9·7	14·5	13·2	10·4	10·5	11·6	23·6	23·5	7·1	16·8
11	10·5	13·7	39·2	16·8	17·6	13·1	11·9	23·0	19·8	18·1	26·6	7·2	18·1

TABLE LIII.—Mean Difference of a Single Observation from the Monthly Mean, at the corresponding hour, for each Hour in each of the Astronomical Quarters, and in the Year 1844.

Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.	Mak. M. T.	Nov. Dec. Jan.	Feb. March. April.	May. June. July.	Aug. Sept. Oct.	Year.
h.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	h.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.	Mic. Div.
12	16·6	31·0	19·7	29·6	24·2	0	12·7	19·3	13·6	15·2	15·2
13	15·5	28·5	21·9	27·2	23·2	1	13·1	16·8	13·0	15·2	14·5
14	11·1	31·9	20·6	29·6	23·3	2	13·4	20·2	12·7	15·2	15·4
15	11·5	31·5	19·5	30·1	23·1	3	20·1	23·5	14·7	21·9	20·0
16	12·4	28·8	18·3	32·4	23·0	4	24·2	23·1	17·5	25·5	22·6
17	13·2	30·2	17·9	26·6	22·0	5	25·4	27·8	19·0	28·2	25·1
18	12·8	25·1	17·6	22·1	19·4	6	25·3	29·3	17·4	23·7	23·9
19	11·5	16·9	16·0	16·7	15·3	7	19·2	21·8	15·2	20·6	19·2
20	10·6	12·9	15·7	12·9	13·0	8	13·0	17·3	13·5	14·5	14·6
21	10·9	11·7	15·0	10·0	11·9	9	12·8	18·2	12·6	13·6	14·3
22	10·9	11·0	13·8	10·7	11·6	10	13·7	25·7	12·7	15·2	16·8
23	10·8	13·9	14·6	10·9	12·5	11	14·8	23·2	14·2	20·3	18·1

Diurnal Variation of the Mean Difference.—The mean difference for the vertical component has a well-marked maximum twice, and minimum twice, in the day. In the means for the year, the principal minimum occurs about 10^h A.M., the principal maximum about 5^h P.M.; a secondary minimum occurs about 9^h P.M., and a secondary maximum about 2^h A.M. The values of the maxima differ little from each other, and the principal

minimum is but slightly less than the secondary minimum. The mean difference has nearly a constant value from midnight till 5^h A.M. The following are the approximate times of maximum and minimum for each of the astronomical quarters of the year; the principal maximum, when it is distinctly marked, is indicated by +, and the principal minimum by −

	Min.	Max.	Min.	Max.
Nov., Dec., Jan., .	-10^h A.M.	$+5^h\ 30^m$ P.M.	9^h P.M.	$12^h\ 10^m$ A.M.
Feb., March, April,	−10 A.M.	6 10 P.M.	8 30 P.M.	+ 2 30 A.M.
May, June, July,	− 2 P.M.	5 10 P.M.	9 30 P.M.	+ 1 10 A.M.
Aug., Sept. Oct., .	− 9 A.M.	5 10 P.M.	9 0 P.M.	+ 5 0 A.M.
Year, . .	−10 A.M.	+5 20 P.M.	8 50 P.M.	2 30 A.M.

The law of variation of the diurnal disturbance of the vertical component has a considerable constancy in each quarter of the year; the differences are even less considerable than appears from the foregoing Table of epochs of maxima and minima.

Annual Variation of the number *of Positive Differences.*—The following are the numbers of differences in 100, which are positive for each month:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
53·0	49·5	57·7	49·8	52·5	55·7	55·4	52·0	55·0	50·0	46·5	40·7

These quantities do not vary regularly; on the whole, the vertical component was oftenest in excess of the monthly mean for the corresponding hours in the months from March till September, and least often in excess in the months of November and December. There were about 52 positive to 48 negative differences in the year 1844.

Diurnal Variation of the number *of Positive Differences.*—The numbers of positive differences in 100 for each hour of Makerstoun mean time in 1844, are as follow:—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
65·2	63·3	66·5	63·9	63·9	63·9	63·0	54·6	52·7	52·7	52·1	47·6	40·9	42·8	40·9	37·1	36·7	35·1	37·7	37·1	45·7	54·0	56·9	61·3

The number of positive differences is greatest about 2^h A.M., and is least about 5^h P.M. These are the epochs already obtained for the greatest negative and positive effects of disturbance on the vertical component (see p. 384).

Mean Disturbance.

Deducing the differences by using the means obtained from the 5 days least disturbed, Table XLV., in the manner already done for the declination, pages 349 and 350, we obtain the following results:—

Annual Variation of the Mean Disturbance.—The following are the mean disturbances, in micrometer divisions, for a single observation of the vertical component in each month of 1844:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
12·3	15·9	27·8	23·1	21·1	14·5	13·8	17·9	18·5	23·7	18·7	12·1

These quantities differ little from the mean differences, page 385, and they follow the same law. The disturbance of the vertical component is a maximum near the equinoxes, and a minimum near the solstices.

The mean disturbance of an observation of the vertical component for the year 1844 = 18·3 Mic. div.

Diurnal Variation of the Positive and Negative Sums of Disturbance.—The following are the sums of the positive and of the negative disturbances, in micrometer divisions, for each hour of the day in 1844:—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
+1169	1330	1132	1193	1235	1323	1308	1398	1259	1536	1843	2560	3413	3552	3998	5262	6002	6974	6926	5672	4142	2683	1635	1297
−5764	5614	5774	5636	5508	5260	4604	3383	2931	2369	1838	1512	1289	1164	1226	1048	1010	806	858	817	1018	1926	3342	4125

The sums of the *positive* disturbances—those which increase the value of the vertical component—are a maximum at $5^h\ 30^m$ P.M., and they are a minimum from 11^h P.M. till 8^h A.M.; during which interval, the positive disturbance has nearly a constant value. The sums of the negative disturbances are a minimum

about 6^h P.M.; the values, however, do not differ greatly from noon till 8^h P.M.; they are a maximum about 2^h A.M. These epochs differ little from those obtained for the horizontal component.

Diurnal Variation of the Mean Disturbance.—The following are the mean disturbances in micrometer divisions for each hour, without regard to sign:—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
22·2	22·2	22·1	21·8	21·5	21·0	18·9	15·3	13·4	12·5	11·8	13·0	15·0	15·1	16·7	20·2	22·4	24·9	24·9	20·7	16·5	14·7	15·9	17·3

These quantities give the same law as that already obtained for the mean *differences*, p. 387. The mean disturbance of the vertical component is a minimum at 10^h A.M.; it is a maximum at $5^h\ 40^m$ P.M.; a secondary minimum occurs at $9^h\ 10^m$ P.M., and a secondary maximum about 2^h A.M.,—the value of the disturbance varying little from midnight till 5^h A.M.

Annual Variation of the number *of Positive Disturbances.*—The numbers per cent. of hourly observations in each month, which were greater than the normal means for the corresponding hours, are as follow:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
54·5	41·7	71·0	50·0	52·3	55·8	55·4	46·3	62·3	57·3	40·7	35·4

Taking the mean of each three months as the mean for the middle month—

43·9	55·7	54·2	57·8	52·7	54·5	52·5	54·7	55·3	53·4	44·5	43·5

The *number* of positive disturbances of the vertical component is a minimum at the winter solstice, it is a maximum at the equinoxes; but the numbers differ little, in the means of the three months, from February till October. In the year 1844, there were, in 100 observations, 52 greater and 48 less than the normal means at the corresponding hours.

Diurnal Variation of the number *of Positive Disturbances.*—The numbers per cent. of hourly observations which were greater than the monthly means at the corresponding hours, as deduced from the 5-day series, are as follow:—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
38·3	37·7	39·0	40·3	39·3	40·6	40·6	42·8	40·3	40·6	50·8	55·3	57·2	61·7	64·5	63·9	67·1	70·6	68·7	69·3	67·4	60·1	47·9	41·5

The number of positive disturbances is a maximum about 5^h P.M., and a minimum about 1^h A.M. The reverse, of course, holds for the numbers of negative disturbances; they are a maximum about 1^h A.M., and a minimum about 5^h P.M. Since the numbers of positive and negative disturbances have the same epochs of maximum and minimum as their sums, it may be still a question whether the *mean* positive and negative disturbance obeys the same law.

Diurnal Variation of the Positive and Negative Means *of Disturbance.*—Dividing the sums of positive and negative disturbances by their respective numbers, we have the following means:—

	12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	12^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
+	9·7	11·3	9·3	9·5	10·0	10·4	10·3	10·4	10·0	12·1	11·6	14·8	19·1	18·4	19·8	26·3	28·7	31·6	32·2	26·1	19·6	14·3	10·9	10·0
−	29·9	28·8	30·2	30·1	29·0	28·3	24·7	18·9	15·7	12·7	11·9	10·8	9·6	9·7	11·0	9·3	9·8	8·8	8·8	8·5	10·0	15·4	20·5	22·5

These quantities give nearly the same results as have already been obtained for the *sums* of disturbances.
The maximum of the *mean* positive disturbance occurs about 6^h P.M.
The minimum .... between 11^h P.M. and 8^h A.M.
The maximum .... negative.............. about 2^h A.M.
The minimum .... about 6^h P.M.

The mean positive disturbance is about three times as great at 5^h and 6^h P.M. as at the hours from 10^h P.M. till 8^h A.M.; and the mean negative disturbance is three-and-a-half times as great at the hours from midnight till 4^h A.M., as at the hours 5, 6, or 7 P.M.

Note on the least probable error of an Observation of the Vertical Component.—Investigations similar to those for the probable error of magnetic declination have not been made for this component. The mean difference, however, for an observation of the vertical component is least for the months of December and January, when it is 12·3 micrometer divisions, and for the months of June and July, when it is 14·0 micrometer divisions.

The probable error of an observation of the vertical component from the monthly mean for the corresponding hour will therefore be in $\left\{\begin{array}{ll}\text{December and February about} & 0{\cdot}00008\\ \text{June and July} \quad \ldots\ldots & 0{\cdot}00010\end{array}\right\}$ of the whole component. These values are estimated from a consideration of the results for the declination, p. 352.

The mean difference of an observation is least at 10^{h} A.M., being 11·6 micrometer divisions, when the mean for the whole year is considered. The probable error of an observation from the monthly mean for the corresponding hour, without reference to which month, will be less than 0·00008 of the whole vertical component.

MAGNETIC DIP.

The following results are deduced from the variations of the horizontal and vertical components of magnetic force by means of the formula

$$\Delta\,\theta = \frac{\frac{1}{2}\sin 2\,\theta}{0{\cdot}0002909}\left(\frac{\Delta\,Y}{Y} - \frac{\Delta\,X}{X}\right)$$

where $\frac{\Delta\,Y}{Y}$ and $\frac{\Delta\,X}{X}$ are the variations respectively of the vertical and horizontal components, as given in the previous Tables, θ is the magnetic dip, assumed to be $71^{\circ}\ 18'$, $\Delta\,\theta$ is the variation of dip, as given in the following Tables, and 0·0002909 is the value of 1′ in parts of radius.

Secular Change of Magnetic Dip.—This deduced from the mean secular changes for the two components, pages 356 and 374, $= -6'{\cdot}1$. It is very probable that this change is considerably too great, and therefore that the secular change for one or both components is also in error, or is due to instrumental causes.

Annual Period of Magnetic Dip.—The following monthly means are obtained from the means for the two components, pages 356 and 374, where the secular change is eliminated :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0′·95	0′·76	1′·23	1′·35	0′·68	0′·07	0′·00	0′·39	0′·73	1′·00	1′·01	0′·76

From these quantities the magnetic dip appears to be a maximum about the beginning of April and the beginning of November; it is a principal minimum about the beginning of July, and a secondary minimum about January. This result differs somewhat from the result obtained from the observations for 1843 (p. 248); this is obviously due to the difference in the results for the vertical component in the two years.

TABLE LIV.—Variations of Magnetic Dip with reference to the Moon's Age, Declination, and Distance, as deduced from Tables XXIII. and XXXIX.

Moon's Age.	Variations of Magnetic Dip.	Moon's Age.	Variations of Magnetic Dip.	After Moon farthest North.	Variations of Magnetic Dip.	After Moon farthest North.	Variations of Magnetic Dip.	Before and after Perigee.	Variations of Magnetic Dip.	Before and after Apogee.	Variations of Magnetic Dip.
Day.	′	Day.	′	Day.	′	Day.	′	Day.	′	Day.	′
15	0·411	0	0·055	0	0·138	14	0·155	7	0·278	7	0·176
16	0·410	1	0·133	1	0·113	15	0·045	6	0·330	6	0·182
17	0·597	2	0·077	2	0·000	16	0·013	5	0·404	5	0·338
18	0·505	3	0·098	3	0·194	17	0·169	4	0·335	4	0·401
19	0·589	4	0·000	4	0·305	18	0·198	3	0·273	3	0·361
20	0·469	5	0·072	5	0·480	19	0·215	2	0·251	2	0·433
21	0·370	6	0·147	6	0·421	20	0·270	1	0·248	1	0·382
22	0·323	7	0·152	7	0·423	21	0·405	P	0·096	A	0·306
23	0·388	8	0·133	8	0·326	22	0·350	1	0·077	1	0·231
24	0·233	9	0·428	9	0·333	23	0·412	2	0·167	2	0·069
25	0·133	10	0·511	10	0·298	24	0·543	3	0·181	3	0·000
26	0·157	11	0·491	11	0·114	25	0·398	4	0·071	4	0·024
27	0·027	12	0·575	12	0·144	26	0·464	5	0·187	5	0·060
28	0·025	13	0·466	13	0·130	27	0·277	6	0·042	6	0·291
29	0·003	14	0·547					7	0·274	7	0·421

Variations of Magnetic Dip with reference to the Moon's Age.—An examination of the mean variations in the first portion of Table LIV. will shew that the magnetic dip is a maximum when the moon is in opposition, and a minimum when in conjunction. This result is also evident in the following means of groups :—

14 days to 16 days, Full Moon,	0′·456	29 days to 1 day, New Moon,	0′·064
17 ...... 20 ...	0′·540	2 ...... 5 days,	0′·062
21 ...... 24 ...	0′·328	6 ...... 9 ...	0′·215
25 ...... 28 ...	0′·085	10 ...... 13 ...	0′·511

This result agrees generally with that obtained from the incomplete series of observations for 1843. In 1843 there was the appearance of a secondary maximum at conjunction ; in 1844 there is the appearance of a secondary minimum at opposition.

Variations of Magnetic Dip with reference to the Moon's Position in Declination.—The general appearance of the quantities in the second portion of Table LIV. is that of a maximum of magnetic dip when the moon is near the equator, and a minimum when it is farthest north and farthest south. The following are means of groups :—

27 days to 1 day, Moon farthest North,	0′·176	13 days to 15 days, Moon farthest South,	0′·110
2 ...... 5 days,	0′·245	16 ...... 19 ...	0′·156
6 ...... 8 ...	0′·390	20 ...... 22 ...	0′·342
9 ...... 12 ...	0′·222	23 ...... 26 ...	0′·404

Both maxima occur when the moon is from one to three days north of the equator. This result was only partially obtained from the incomplete series of observations for 1843.

TABLE LV.—Diurnal Variations of Magnetic Dip for each Month in 1844, as deduced from Tables XXVII. and XLIII.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	′	′	′	′	′	′	′	′	′	′	′	′	′
12	0·578	0·311	0·592	0·943	1·561	1·137	1·230	0·924	0·257	0·294	0·589	0·662	0·489
13	0·606	0·547	1·278	0·811	1·608	1·234	1·310	1·172	0·245	0·355	0·589	0·540	0·591
14	0·663	0·655	1·111	1·096	1·748	1·346	1·457	1·193	0·536	0·340	0·679	0·683	0·692
15	0·439	0·535	0·836	1·486	1·959	1·471	1·633	1·354	0·336	0·011	0·421	0·597	0·656
16	0·219	0·535	0·692	1·155	2·178	1·667	1·793	1·395	0·365	0·000	0·266	0·280	0·611
17	0·000	0·016	0·923	0·969	2·015	1·742	1·943	1·775	0·281	0·213	0·207	0·126	0·583
18	0·012	0·169	0·283	1·223	2·238	2·149	2·074	1·836	0·674	0·407	0·000	0·000	0·655
19	0·032	0·173	0·708	1·829	2·579	2·406	2·494	2·474	1·402	0·623	0·133	0·017	0·972
20	0·250	0·155	1·431	2·670	3·181	2·917	2·934	3·227	1·840	1·453	0·345	0·296	1·458
21	0·427	0·455	1·905	3·190	3·435	3·209	3·486	3·344	2·452	2·124	0·978	0·561	1·863
22	0·781	0·660	2·120	3·100	3·494	3·147	3·603	3·251	2·856	2·438	1·337	0·838	2·035
23	0·766	0·824	1·880	2·962	3·124	2·643	3·056	2·564	2·222	1·891	1·365	0·818	1·742
0	0·635	0·568	1·549	2·053	2·366	1·880	2·213	1·960	1·641	1·332	0·799	0·646	1·203
1	0·349	0·227	0·719	1·493	1·955	1·322	1·496	1·118	0·851	0·836	0·785	0·579	0·710
2	0·184	0·000	0·704	1·037	1·418	0·751	0·971	0·688	0·539	0·648	0·604	0·477	0·401
3	0·371	0·131	0·292	0·745	1·287	0·572	0·710	0·406	0·538	0·319	0·694	0·477	0·278
4	0·206	0·279	0·149	0·581	0·397	0·349	0·584	0·507	0·092	0·301	0·978	0·490	0·142
5	0·341	0·429	0·159	0·000	0·230	0·121	0·434	0·000	0·296	0·240	0·418	0·540	0·000
6	0·515	0·400	0·549	0·146	0·000	0·062	0·000	0·174	0·202	0·401	0·498	0·595	0·028
7	0·723	0·421	0·052	0·510	0·186	0·000	0·047	0·172	0·119	0·498	0·805	0·617	0·078
8	0·459	0·242	0·000	0·485	0·632	0·264	0·548	0·354	0·116	0·329	0·565	0·344	0·094
9	0·546	0·252	0·729	0·733	1·023	0·519	0·811	0·712	0·000	0·336	0·801	0·707	0·330
10	0·480	0·641	0·665	0·395	1·173	0·630	0·959	0·584	0·048	0·166	0·654	0·777	0·330
11	0·457	0·597	0·279	0·765	1·520	1·017	1·103	0·975	0·075	0·385	0·774	0·622	0·447

Diurnal Variation of Magnetic Dip.—In the mean for the year the magnetic dip is a maximum at 10^h 10^m A.M.; it has its least value at 5^h 10^m P.M., but the value differs little from 5^h till 8^h P.M.; it has a secondary maximum at 2^h 10^m A.M., and a secondary minimum at 5^h 10^m A.M. The increase is most rapid from 6^h A.M. till 10^h A.M., and the diminution is most rapid from 10^h A.M. till 5^h P.M.

In the four months of May, June, July, and August, the secondary maximum and minimum are not at all visible; in the four equinoctial months the variation is very irregular from about 5^h P.M. till about 5^h A.M., the dip oscillating about a nearly constant value; in the four winter months the secondary becomes the principal maximum, the maximum at 5^h nearly disappearing in December. The principal minimum always occurs about 10^h A.M.

The range of the mean diurnal variation of magnetic dip for the year $=2'\cdot04$

We might proceed to consider the diurnal variation, as obtained from the selected series of 10 days and 5 days in each month, but this will be done with more accuracy in connection with another year's observations; at present it will be enough to give the variation for the year, as deduced from the 120-day and 60-day series. The variations for these series, deduced from the last columns of Tables XXVIII., XXIX,, XLIV., and XLV., and reduced so that the mean is equal to the mean of the last column of Table LV., are as follow:—

Series.	12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′	′
120-day,	0·54	0·60	0·66	0·71	0·69	0.68	0·81	1·02	1·46	1·83	1·98	1·71	1·28	0·74	0·47	0·28	0·24	0·07	−0·04	−0·05	0·05	0·15	0·21	0·29
60-day,	0·48	0·54	0·61	0·66	0·68	0·69	0·83	1·02	1·49	1·84	1·96	1·76	1·30	0·76	0·49	0·34	0·29	0·04	−0·03	−0·04	0·01	0·11	0·24	0·30

The means for both series give the same result; the maximum of dip occurs at 10^h A.M., and the minimum at 6^h 40^m P.M.: the secondary maximum and minimum are not exhibited in these variations; the dip, however, has nearly a constant value from 2^h till 5^h A.M. The results for the selected series, which are nearly unaffected by intermittent disturbances, place the principal minimum an hour and a-half later than the result for the whole series, and the removal of the disturbances seems nearly to obliterate the secondary maximum and minimum in the diurnal variation. The range of the mean diurnal variation for the year from all the three series is slightly above 2′, which is equivalent to a variation of 6′ of magnetic declination; the range of the diurnal variation of magnetic declination for the year being 7′·7, the motion in declination is rather greater than that in dip at Makerstoun.

Ranges of the Mean Diurnal Variation of Magnetic Dip.—The ranges of the mean diurnal variation for each month, as deduced from the whole series of observations, are as follow:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0′·78	0′·82	2′·12	3′·19	3′·49	3′·21	3′·60	3′·34	2′·86	2′·44	1′·36	0′·84

These quantities follow the same law as that already obtained for the horizontal component. The range of magnetic dip is a minimum, and has a nearly constant value, in the three winter months, December, January, and February; the range for November is exaggerated by intermittent disturbances. The range is a maximum, and is nearly constant in the months of April, May, June, July, and August. When the ranges of magnetic declination are reduced to their equivalent motions, as shewn by a needle freely suspended in the direction of magnetic dip, it will be found that the vertical motion is greater than the horizontal motion in May and July, that the amounts of the two motions differ little in the months for which the sun is north of the equator, and that in the months for which it is south of the equator the horizontal motions are considerably greater than the vertical motions.

Diurnal Variation of Magnetic Dip with reference to the Moon's Hour-Angle.—The following Table contains the variations of magnetic dip, as deduced from the last three columns of Tables XXXI. and XLVII.:—

TABLE LVI.—Variations of Magnetic Dip, with reference to the Moon's Hour-Angle, as deduced from Tables XXXI. and XLVII.

Moon's Hour-Angle.	LUNATIONS.			Moon's Hour-Angle.	LUNATIONS.			Moon's Hour-Angle.	LUNATIONS.		
	Winter.	Summer.	Year.		Winter.	Summer.	Year.		Winter.	Summer.	Year.
h.	′	′	′	h.	′	′	′	h.	′	′	′
0	0·202	0·192	0·134	8	0·000	0·356	0·115	16	0·247	0·233	0·176
1	0·138	0·241	0·126	9	0·143	0·219	0·118	17	0·226	0·300	0·200
2	0·228	0·196	0·149	10	0·147	0·272	0·146	18	0·171	0·369	0·207
3	0·141	0·255	0·135	11	0·187	0·248	0·152	19	0·032	0·291	0·099
4	0·056	0·206	0·068	12	0·023	0·216	0·056	20	0·151	0·404	0·215
5	0·196	0·240	0·155	13	0·119	0·081	0·036	21	0·076	0·386	0·168
6	0·107	0·278	0·129	14	0·127	0·000	0·000	22	0·213	0·358	0·222
7	0·114	0·249	0·119	15	0·164	0·202	0·120	23	0·112	0·304	0·145
								24	0·107	0·297	0·139

The following are the means at nearly two-hourly intervals :—

Groups,	$0^h\ 0^m$	$2^h\ 25^m$	$4^h\ 20^m$	$6^h\ 15^m$	$8^h\ 10^m$	$10^h\ 5^m$	$12^h\ 0^m$	$13^h\ 55^m$	$15^h\ 50^m$	$17^h\ 45^m$	$19^h\ 40^m$	$21^h\ 35^m$
Winter,.....	0′·15	0′·18	0′·13	0′·11	0′·07	0′·17	0′·07	0′·14	0′·24	0′·10	0′·11	0′·16
Summer,...	0′·24	0′·22	0′·22	0′·26	0′·29	0′·26	0′·15	0′·10	0′·27	0′·33	0′·39	0′·33
Year 1844,	0′·13	0′·14	0′·11	0′·12	0′·12	0′·15	0′·05	0′·06	0′·19	0′·15	0′·19	0′·18

In the winter group—

The principal maximum of dip occurs about 4 hours after the moon's inferior transit.
The principal minimum occurs 4 hours before and at the inferior transit.
A secondary maximum occurs about 2 hours after the superior transit.
A secondary minimum occurs about 6 hours before the superior transit.

There is a secondary maximum 2 hours before the inferior transit, which is perhaps accidental.

In the summer group the law of variation is most distinct—

The principal maximum occurs 4 hours before the moon's superior transit.
The principal minimum occurs about 2 hours after the inferior transit.
The secondary maximum occurs about 4 hours before the inferior transit.
The secondary minimum occurs about 3 hours after the superior transit.

In the mean for the year the secondary maximum and minimum are not well marked—

The principal maximum occurs about 6 hours after the inferior transit.
The principal minimum occurs about 1 hour after the inferior transit.
The secondary maximum occurs about 2 hours before the inferior transit.
The secondary minimum occurs about 6 hours before the inferior transit.

The whole range of these variations is very small, the greatest range is that for the summer group, which is 0′·4, this however is equivalent to a range of 1′·2 for the declination: if we examine the similar discussion for the magnetic declination, p. 342, it will be seen that the greatest range is that for the winter group, which is 1′·5; so that the diurnal range of the variation due to the moon is nearly the same for the magnetic declination in winter as it is for the magnetic dip in summer.

If we determine the variations from those for the horizontal and vertical components after Tables XXXI. and XLVII., from which the large disturbances have been removed, we have for the variations of dip for the year—

$0^h\ 0^m$	$2^h\ 25^m$	$4^h\ 20^m$	$6^h\ 15^m$	$8^h\ 10^m$	$10^h\ 5^m$	$12^h\ 0^m$	$13^h\ 55^m$	$15^h\ 50^m$	$17^h\ 45^m$	$19^h\ 40^m$	$21^h\ 35^m$
0′·104	0′·087	0′·030	0′·062	0′·045	0′·068	0′·001	0′·000	0′·134	0′·087	0′·157	0′·080

These quantities give nearly the same law as that obtained above.

INTERMITTENT DISTURBANCES.

Effect of Intermittent Disturbances upon the Yearly Mean of Magnetic Dip.—We obtain the following results for the mean magnetic dip from the values of the horizontal and vertical components, pages 365 and 384:—

The Mean Magnetic Dip, as deduced from the whole series of Hourly Observations, is greater than that deduced from the............	120-day series, by 0′·175 60-day series, by 0′·245

It has been found, p. 343, that the intermittent disturbances have no effect on the mean declination; it appears, however, from the above results, that they affect the mean dip, the result deduced from the 60-day series, that least affected by disturbance, shewing a less dip than that deduced from the whole series, by 0′·25, which is equivalent to about 0′·8 for the magnetic declination.

Effect on the Monthly Mean of Magnetic Dip.—Making use of the quantities for the two components of force, pages 365 and 384, we obtain the following corrections of the means of magnetic dip from the 10-day and 5-day series, to those from the complete series of observations in each month:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
10 days,	+0′·07	+0′·46	+0′·29	+0′·33	−0′·04	−0′·05	−0′·01	+0′·09	+0′·01	+0′·48	+0′·18	+0′·30
5 days,	+0′·13	+0′·54	+0′·42	+0′·42	+0′·10	−0′·23	−0′·03	+0′·14	+0′·13	+0′·56	+0′·36	+0′·38

These quantities obey the same law as that deduced from the mean variations of dip for each month; upon applying them with an opposite sign, as corrections to the mean variations of dip, p. 390, we obtain the following monthly mean variations of magnetic dip, as deduced from the 10-day and 5-day series of observations selected in each month as least affected by disturbance:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
10 days,	0′·88	0′·30	0′·94	1′·02	0′·72	0′·12	0′·01	0′·30	0′·71	0′·52	0′·83	0′·46
5 days,	0′·82	0′·22	0′·81	0′·94	0′·58	0′·30	0′·03	0′·25	0′·60	0′·44	0′·65	0′·38

The variations follow the same law, with some irregularities, as the variations from the complete series; the ranges, however, are smaller; the conclusion already stated, with respect to the horizontal component, is therefore equally applicable here, see p. 356.

Effect of Disturbances on the Hourly Means of Magnetic Dip.—The following are the differences of the hourly means of magnetic dip for the year, or the means as deduced from the whole series, *minus* the means as deduced from the 120-day and 60-day series of observations (see Table LV. and p. 392), each series having the same mean value.

Whole Series *Minus.*	A.M. 12h	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h
120-day series,	−0·05	−0·01	+0·03	−0·05	−0·08	−0·10	−0·16	−0·05	−0·01	+0·03	+0·06	+0·03
60-day series,	+0·01	+0·05	+0·08	−0·01	−0·07	−0·10	−0·17	−0·05	−0·03	+0·02	+0·07	−0·02
	P.M. 0h	1h	2h	3h	4h	5h	6h	7h	8h	9h	10h	11h
120-day series,	−0·08	−0·03	−0·07	0·00	−0·10	−0·07	+0·06	+0·13	+0·05	+0·18	+0·12	+0·16
60-day series,	−0·09	−0·05	−0·09	−0·06	−0·15	−0·04	+0·06	+0·12	+0·08	+0·22	+0·08	+0·14

Both series of differences give the same law; considering the differences for the 60-day series, we find that the mean effect of disturbance upon the diurnal variation of magnetic dip is a positive maximum twice and a negative maximum twice; it is a principal positive maximum about 9^h P.M. and a secondary positive maximum at 10^h A.M.: it is a negative maximum at 6^h A.M. and about 5^h P.M. The effect of disturbance in diminishing the westerly declination, and in increasing the dip, is a maximum about 9^h P.M.; the effect of disturbances in increasing the westerly declination is a maximum about 10^h A.M., when their effect in increasing the dip is a secondary maximum. The effect of disturbances in diminishing the dip is a maximum when the effect upon the magnetic declination is zero.

TOTAL MAGNETIC FORCE.

The following results are deduced from the variations of the horizontal and vertical components by means of the formula

$$\frac{\Delta R}{R} = \frac{\Delta Y}{Y} - \cos^2\theta \left(\frac{\Delta Y}{Y} - \frac{\Delta X}{X} \right)$$

where $\frac{\Delta R}{R}$ is the variation of the total force, $\frac{\Delta Y}{Y}$ and $\frac{\Delta X}{X}$ the quantities in the tables for the vertical and horizontal components respectively, and θ the magnetic dip assumed $= 71^\circ\ 18'$.

Secular Change of the Total Force.—This deduced from the secular changes for the two components, pages 356 and 374, = − 0·001388.

Annual Period of the Total Magnetic Force.—The following quantities have been obtained from the means, pages 356 and 374, exhibiting the annual periods for the two components freed from secular change :—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·000	322	121	117	309	212	218	090	000	053	048	233	266

The accuracy of this result depends chiefly on that for the vertical component, which it resembles in every respect. The total magnetic force is a minimum in August and a maximum in January or December; it is also a secondary minimum in the beginning of March and a maximum in April.*

TABLE LVII.—Variations of the Total Magnetic Force, with reference to the Moon's Age, Declination, and Distance, as deduced from Tables XXIII. and XXXIX.

Moon's Age.	Variations of Total Force.	Moon's Age.	Variations of Total Force.	After Moon farthest North.	Variations of Total Force.	After Moon farthest North.	Variations of Total Force.	Before and after Perigee.	Variations of Total Force.	Before and after Apogee.	Variations of Total Force.
Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00	Day.	0·00
15	0000	0	0167	0	0149	14	0115	7	0133	7	0087
16	0038	1	0113	1	0112	15	0080	6	0100	6	0123
17	0063	2	0125	2	0120	16	0090	5	0000	5	0066
18	0068	3	0115	3	0106	17	0126	4	0072	4	0049
19	0020	4	0120	4	0053	18	0095	3	0075	3	0055
20	0120	5	0146	5	0002	19	0055	2	0074	2	0090
21	0117	6	0128	6	0043	20	0097	1	0067	1	0060
22	0111	7	0149	7	0071	21	0031	P	0075	A	0080
23	0148	8	0137	8	0067	22	0033	1	0084	1	0131
24	0165	9	0117	9	0077	23	0097	2	0101	2	0166
25	0153	10	0020	10	0033	24	0000	3	0079	3	0125
26	0140	11	0066	11	0065	25	0073	4	0096	4	0130
27	0142	12	0016	12	0042	26	0060	5	0178	5	0136
28	0084	13	0033	13	0114	27	0109	6	0127	6	0120
29	0115	14	0012					7	0091	7	0084

* *Note on the Annual Variation of the Total Magnetic Force.*—In the note, p. 357, it has been mentioned that the observations of the bifilar magnetometer, made at Toronto in 1842, had been discussed, and that the same law had resulted as from the Makerstoun observations. The observations of the bifilar magnetometer made at St Helena, in the four years, 1842–3–4–5, have been examined in a similar manner. The temperature coefficient has been deduced from the bifilar observations, and the observations have been corrected by it. The variations of the horizontal component at St Helena may be considered as the variations of the total magnetic force, as much at least as they are the representatives of the varying magnetic inclination at Toronto and Makerstoun. The mean of the results for the four years (three years only for the first ten weeks) indicates that the horizontal component at St Helena is a maximum in the beginning of June, and a minimum in the beginning of December: this result differs from that obtained by Colonel SABINE from two years of the same observations (chiefly, perhaps, because the results for the separate years are not very consistent among themselves.) In Colonel SABINE's result there appears to be a connection between the intensity and temperature of the air; the magnetic force appearing greatest when the temperature is greatest. Such a result would be in opposition to the well-known connection between the magnetic intensity and mean temperature at different parts of the earth's surface; in that case, the intensity seems greatest where the mean temperature is least. Perhaps, however, the St Helena Observatory is not well situated for the determination of such a connection as a general annual law, since, in the first place, the range of temperature is small (the difference between the mean temperatures of the hottest and coldest months being only 8° Fahr., about $\frac{1}{3}$ of the difference at Makerstoun); and, in the second place, the Observatory is placed above extremely magnetic rocks; the whole island indeed is one large magnetic mass. But perhaps the result obtained from the four years' observations is the strongest objection, since it places the maximum and minimum of magnetic intensity at the two times of yearly *mean* temperature.

Variations of Total Magnetic Force with reference to the Moon's Age.—It is evident, from the first portion of Table LVII., that the total force is a minimum about opposition and a maximum about conjunction; this will also appear in the following means of groups:—

14 days to 16 days, Full Moon,	0·000017		29 days to 1 day, New Moon,	0·000132
17 ...... 20 ...	0·000068		2 ...... 5 days,	0·000126
21 ...... 24 ...	0·000135		6 ...... 9 ...	0·000133
25 ...... 28 ...	0·000130		10 ...... 13 ...	0·000034

The value of the force does not vary greatly for the 10 days before and the 10 days after conjunction, the mean value being 0·000131; the mean for the remaining 10 days, including opposition, being 0·000034. There is a slight appearance of a secondary minimum at conjunction, the maxima occurring before and after that epoch. The incomplete series of observations for 1843 gave nearly the same result, the secondary minimum at conjunction being better marked.

Variations of the Total Magnetic Force with reference to the Moon's Declination.—The following are means of groups of the second portion of Table LVII.:—

27 days to 1 day, Moon farthest North,	0·000123		13 days to 15 days, Moon farthest South,	0·000103
2 ...... 5 days,	0·000070		16 ...... 19 ...	0·000091
6 ...... 8 ...	0·000060		20 ...... 22 ...	0·000054
9 ...... 12 ...	0·000054		23 ...... 26 ...	0·000058

The simple means and the means of groups indicate that the total magnetic force is a maximum when the moon has its greatest north and greatest south declination; it is a minimum between these epochs. This result also was obtained from the incomplete series of observations for 1843.

TABLE LVIII.—Diurnal Variations of the Total Magnetic Force in 1844, as deduced from Tables XXVII. and XLIII.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
12	0049	0077	0137	0000	0015	0228	0215	0031	0000	0180	0000	0027	0025
13	0074	0043	0021	0093	0027	0171	0178	0029	0028	0145	0010	0065	0019
14	0044	0034	0000	0094	0000	0166	0168	0000	0011	0102	0040	0000	0000
15	0025	0026	0094	0037	0021	0206	0194	0082	0016	0091	0078	0004	0018
16	0000	0041	0153	0049	0033	0207	0226	0164	0053	0000	0097	0025	0032
17	0000	0079	0115	0077	0116	0228	0240	0191	0106	0074	0112	0035	0059
18	0016	0077	0227	0157	0162	0208	0220	0183	0119	0156	0147	0056	0089
19	0033	0086	0318	0197	0166	0198	0171	0166	0116	0250	0151	0081	0106
20	0056	0086	0336	0172	0136	0149	0103	0109	0121	0250	0147	0076	0090
21	0067	0063	0309	0142	0104	0068	0026	0066	0093	0244	0108	0052	0057
22	0058	0047	0279	0128	0049	0015	0002	0042	0051	0245	0089	0028	0031
23	0090	0062	0335	0165	0076	0000	0000	0072	0077	0302	0131	0049	0058
0	0122	0111	0362	0313	0158	0080	0076	0125	0133	0439	0276	0083	0135
1	0183	0169	0503	0344	0229	0152	0176	0270	0271	0490	0300	0114	0212
2	0233	0226	0618	0463	0323	0246	0263	0392	0377	0562	0353	0166	0297
3	0221	0263	0700	0574	0406	0321	0391	0524	0492	0671	0469	0218	0383
4	0221	0298	0734	0607	0569	0422	0498	0583	0615	0656	0550	0225	0443
5	0229	0278	0782	0768	0663	0465	0550	0683	0612	0662	0602	0224	0488
6	0213	0292	0734	0784	0679	0489	0551	0688	0551	0561	0546	0280	0476
7	0200	0261	0687	0669	0649	0479	0561	0626	0469	0565	0401	0231	0428
8	0207	0254	0585	0534	0587	0444	0476	0550	0391	0459	0303	0221	0363
9	0177	0161	0338	0399	0472	0379	0379	0387	0307	0334	0195	0150	0252
10	0090	0117	0101	0329	0337	0298	0311	0275	0233	0279	0092	0115	0160
11	0076	0000	0217	0193	0201	0238	0239	0084	0146	0238	0028	0077	0090

Diurnal Variation of the Total Magnetic Force.—In the mean for the year the total force is a principal maximum at $5^h\ 20^m$ P.M. and a principal minimum at $2^h\ 10^m$ A.M.; it is a secondary maximum at $7^h\ 10^m$ A.M. and a secondary minimum at $10^h\ 10^m$ A.M. The range from the principal maximum to the principal minimum is 0·000490; the range from the secondary maximum to the secondary minimum is 0·000075, the total force being unity.

In the months of June and July the principal minimum occurs between 10^h and 11^h A.M. and the secondary minimum about 2^h A.M.; the two minima have nearly equal values in the months of May and August; the minimum about 2^h A.M. is best marked in all the remaining months of the year. The principal maximum occurs between 4^h P.M and 7^h P.M. in each month of the year, and earlier, on the whole, in the equinoctial than in the solstitial months.

Leaving the more minute considerations with respect to the variation of the diurnal law with season to be made in connection with another year's observations, we shall only farther at present consider the diurnal variation for the year as obtained from the observations upon the selected 120 and 60 days free from disturbances. The variations for these series deduced from the last columns of Tables XXVIII., XXIX., XLIV., and XLV., and reduced so that the mean for each series equals the mean for the whole series in the last column of Table LVIII., are as follow :—

Series.	A.M.	12^h	1^h	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	P.M.
120-day,	0·000	144	135	140	149	158	172	174	164	133	083	038	033	062	138	201	250	285	306	307	298	283	256	222	180	
60-day,	0·000	171	159	156	158	161	175	176	164	140	086	037	022	058	130	199	242	269	288	288	286	270	249	222	194	

Both series give nearly the same result; the epochs of maxima and minima are as follow :—

120-day series,	Principal Max. $5^h\ 50^m$ P.M.	Secondary Min. $1^h\ 30^m$ A.M.	Secondary Max. $5^h\ 50^m$ A.M.	Principal Min. $10^h\ 50^m$ A.M.
60-day series,	.... $5^h\ 50^m$ P.M.	.... $2^h\ 10^m$ A.M.	.... $5^h\ 50^m$ A.M.	.... $10^h\ 50^m$ A.M.

The principal difference between the results for the complete and undisturbed series consists in the transference of the epochs of principal and secondary minimum; in the complete series the principal minimum occurs at 2^h A.M., in the undisturbed series a slightly-marked secondary minimum occurs at that hour, but the principal minimum occurs about 11^h A.M., nearly the time of the secondary minimum for the complete series. The range of the variations is much diminished in the selected series, the whole range for the 120-day series being 0·000274, and for the 60-day series only 0·000266, little more than half the range for the whole series. The range from the secondary minimum to the secondary maximum in the 60-day series is only 0·000020, so that the selection of days nearly altogether free from disturbance has the effect here also of nearly obliterating the secondary minimum and maximum.

Ranges of the Mean Diurnal Variation of the Total Magnetic Force.—The ranges of the diurnal variation for each month, as deduced from the whole series of observations, are as follow :—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·000	233	298	782	784	679	489	561	688	615	671	602	280

The diurnal range of the total force is a principal minimum in January, and a secondary minimum in June; it is a maximum at the equinoxes. There is no doubt, however, that if the diurnal variations for each month were deduced from the selected series of observations, the ranges would be found to obey the same law as that already obtained for the vertical component from the same series. See p. 381.

Diurnal Variation of the Total Magnetic Force with reference to the Moon's Hour-Angle.—The following Table contains the variations of the total force, as deduced from the last three columns of Tables XXXI. and XLVII.

TABLE LIX.—Variations of the Total Magnetic Force with reference to the Moon's Hour-Angle, as deduced from Tables XXXI. and XLVII.

Moon's Hour-Angle.	LUNATIONS.			Moon's Hour-Angle.	LUNATIONS.			Moon's Hour-Angle.	LUNATIONS.		
	Winter.	Summer.	Year.		Winter.	Summer.	Year.		Winter.	Summer.	Year.
h.	0·00	0·00	0·00	h.	0·00	0·00	0·00	h.	0·00	0·00	0·00
0	0022	0078	0033	8	0041	0000	0003	16	0184	0077	0113
1	0011	0043	0010	9	0039	0015	0010	17	0169	0082	0109
2	0000	0038	0002	10	0065	0028	0030	18	0123	0059	0074
3	0003	0032	0001	11	0099	0036	0051	19	0165	0044	0088
4	0023	0033	0011	12	0147	0026	0069	20	0127	0030	0062
5	0025	0028	0009	13	0168	0042	0088	21	0147	0039	0076
6	0030	0020	0009	14	0198	0071	0119	22	0107	0046	0060
7	0016	0018	0000	15	0198	0056	0111	23	0064	0052	0041
								24	0074	0056	0048

The variations in Table LIX. give the following epochs of maxima and minima. In the winter group, containing those lunations for which the moon is full when north of the equator—

The maximum occurs about 2 hours after the moon's inferior transit.
The minimum .... 2 hours after .... superior transit.

There are appearances of a secondary maximum and minimum, but they are not distinct: the whole range of the mean variations for the group is 0·000200, which is only one-fourth less than the range of the solar diurnal variations in the mean for the year.

In the summer group, there are two nearly equal maxima and two minima—

A maximum occurs about 4 hours after the moon's transit of the inferior meridian.
A minimum .... 5 ...... before .... superior ....
A maximum ....when the moon transits the superior meridian.
The minimum ...... about 4 hours before the moon's transit of the inferior meridian.

The range of the variations is only 0·000082.

In the mean for the year, there are only one maximum and one minimum well marked—

The maximum occurs about 2 hours after the moon's transit of the inferior meridian.
The minimum .... 5 .... superior ....

Minima actually occur 3 hours and 7 hours after the superior transit, but the intervening maximum is very slightly marked. The range of the variations is 0·000120.

The following mean variations for the year have been obtained from those for the two components, pages 365 and 382, for which the large disturbances were rejected:—

	0h 0m	2h 25m	4h 20m	6h 15m	8h 10m	10h 5m	12h 0m	13h 55m	15h 50m	17h 45m	19h 40m	21h 35m
0·0000	28	20	19	00	07	25	56	79	66	45	27	32

These quantities give the following epochs:—

The principal maximum occurs about 2 hours after the moon's transit of the inferior meridian.
A secondary minimum .... 5 hours before .... superior ....
A secondary maximum .... the time of .... superior ....
The principal minimum .... 6 hours after .... superior ....

The secondary maximum is not well marked; the whole range of the variations is less than 0·000100, the total magnetic force being unity. The elimination of the larger disturbances renders the variation for the year nearly similar in its epochs to that for the summer group; it is probable, therefore, that the differences between the variations for the summer and winter groups is chiefly due to disturbances.

INTERMITTENT DISTURBANCES.

Effect of Disturbances on the Yearly Mean for the Total Magnetic Force.—We obtain the following results from the mean values of the horizontal and vertical components for the year, pages 365 and 384 :—

The mean total force, as deduced from the whole series of hourly observations for the year, is less than that deduced from the..........................	120-day series, by 0·000038 60-day series, by 0·000039

Effect of Disturbances on the Monthly Mean of the Total Force.—Using the corrections for the two components of force, pages 365 and 384, we obtain the following quantities, corrections of the means of total force for each month obtained from the 10-day and 5-day series, to the means from the complete series :—

	Jan.	Feb.	March.	April.	May	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
10 days,	−0·000046	+0·000050	−0·000 | 152	030	067	026	030	029	049	091	012 |	+0·000022
5 days,	−0·000037	+0·000052	−0·000 | 163	052	044	083	028	015	039	079	028 |	+0·000034

From these quantities the effect of disturbance is in general to diminish the value of the force, the greatest diminutions occurring in March and October; the diminution is least near the summer solstice, and the effect is to increase the force in December and February. Portion of these effects is due to consecutive disturbance, such as secular change, but the elimination of that portion would not affect the generality of this conclusion. By subtracting the previous quantities from the monthly mean variations for the total force, p. 395, we would obtain the monthly means as deduced from the 10-day and 5-day series; the resulting means give the same law as that obtained from the means for the whole series.

Effect of Disturbances on the Hourly Means of the Total Magnetic Force.—The following are the differences of the hourly means of the total force, or the means as deduced from the whole series *minus* the means as deduced from the 120-day and 60-day series of observations; each series having the same mean value. See Table LVIII., and page 396.

Whole series *Minus.*	A.M. 12^h	1^h	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
120-day series,	−0·000 | 121	116	140	131	126	113	085	058	043	026	007	+0·000025
60-day series,	−0·000 | 146	140	156	140	129	116	087	058	050	029	006	+0·000036
	P.M. 0^h	1^h	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
120-day series,	+0·000 | 073	074	096	133	158	182	169	130	080	−0·000004	−0·000 | 062	090
60-day series,	+0·000 | 077	082	098	141	174	200	188	142	093	+0·000003	−0·000 | 062	104

These quantities give the same law of variation. The positive effect of disturbance upon the mean of the total force, is a maximum at 5^h 10^m P.M.; the negative effect is a maximum at 2^h 10^m A.M. The effect is zero at 10^h 20^m A.M., and at 9^h 10^m P.M.

The effect of disturbance in diminishing the westerly declination, and in increasing the dip, is a maximum at 9^h P.M., when the effect on the total force is zero; the effect of disturbance in increasing the westerly declination is a maximum at 10^h A.M.; at the same hour there is a secondary maximum of effect in increasing the dip, and at the same hour the effect on the total force is zero. On the contrary, when the effect of disturbances upon the mean total force is a positive maximum,—namely, at 5^h P.M., the effect upon the magnetic declination and dip is zero; and when the effect upon the total force is a negative maximum at 2^h A.M., the effect upon the magnetic declination and dip is nearly zero; so that, *when the effect of disturbance upon the* direction *of the magnetic force is a maximum, the effect upon its* intensity *is zero, and* vice versa.

It is remarkable, even merely as a coincidence, that the effect of disturbance upon the *direction* of the magnetic force is a maximum when the sun is on or near the magnetic meridian, and zero when nearly at right angles to that plane; while the effect of disturbances upon the *intensity* of the magnetic force is zero when the sun is near the plane of the magnetic meridian, and a maximum when in the plane nearly at right angles to it, for the effect of disturbance differs little at 4^h A.M. from that at 2^h A.M. when it is a maximum.

TABLE LX.—Ranges for each Civil Day of Magnetic Declination, and of the Horizontal and Vertical Components of Magnetic Force, as obtained from all the Observations (Hourly, Term-Day, or Extra) made in 1844.

Civil Day.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.	Declination.	Hor. Comp.	Vert. Comp.
	′	0·0	0·0	′	0·0	0·0	′	0·0	0·0	′	0·0	0·0	′	0·0	0·0	′	0·0	0·0
	JANUARY.			MARCH.			MAY.			JULY.			SEPTEMBER.			NOVEMBER.		
1	10·88	0214	0032	10·07	0232	0034	19·10	0904	0167	12·78	0405	0035	...	...	...	15·03	0266	0051
2	18·41	0323	0061	34·22	1579	0325	17·04	0526	0118	13·51	0335	0035	11·57	0414	0046	22·17	0552	0052
3	5·00	0262	0027	...	...	...	18·72	0619	0175	10·83	0361	0035	12·09	0372	0043	...	...	...
4	12·26	0221	0059	34·94	0797	0226	8·43	0396	0024	13·81	0347	0044	12·33	0412	0089	18·53	0224	0062
5	33·79	0473	0114	33·76	1397	0262	...	...	...	10·94	0350	0030	10·16	0260	0038	9·67	0144	0038
6	25·29	0694	0072	29·12	0690	0336	13·58	0350	0123	12·48	0424	0021	7·56	0342	0037	6·14	0228	0063
7	...	...	...	36·23	1249	0304	9·52	0336	0049	...	...	...	12·87	0423	0054	8·22	0151	0015
8	13·02	0729	0075	27·29	0762	0301	21·58	0811	0197	23·08	0694	0157	...	...	...	8·58	0213	0026
9	9·54	0560	0071	24·06	0606	0183	15·29	0444	0198	7·47	0494	0056	15·47	0329	0065	6·88	0186	0026
10	13·11	0599	0066	...	...	...	8·46	0297	0068	9·27	0363	0044	9·54	0253	0073	...	...	...
11	8·34	0210	0021	13·48	0230	0032	10·62	0364	0039	9·99	0430	0032	10·64	0343	0031	28·31	0973	0128
12	16·34	0336	0022	12·60	0344	0088	...	...	...	8·63	0403	0035	11·50	0325	0026	20·62	0448	0174
13	5·33	0091	0022	9·48	0260	0057	10·05	0326	0042	14·36	0602	0060	12·92	0384	0022	13·57	0168	0033
14	...	...	...	6·91	0297	0013	18·38	0459	0056	...	...	...	18·77	0419	0063	12·17	0210	0058
15	5·54	0123	0011	8·76	0150	0023	23·11	0701	0212	14·18	0489	0051	...	...	...	6·03	0169	0018
16	6·45	0148	0016	9·22	0199	0016	10·83	0400	0078	13·58	0410	0058	16·91	0344	0040	68·49	4529	0896
17	9·41	0178	0027	...	...	...	9·01	0295	0042	15·17	0511	0068	18·29	0553	0090	...	...	...
18	17·37	0249	0056	20·95	0311	0060	9·40	0361	0026	18·65	0454	0088	14·95	0382	0056	33·19	0923	0074
19	3·73	0143	0044	16·85	0794	0061	...	...	...	12·54	0518	0022	24·80	0438	0032	17·37	0400	0122
20	8·77	0209	0020	12·60	0358	0037	8·41	0295	0025	12·28	0389	0030	38·86	0739	0245	14·91	0186	0027
21	..	...	...	9·48	0263	0044	23·34	0392	0051	...	...	...	12·23	0330	0090	5·65	0179	0026
22	6·33	0218	0060	12·04	0297	0019	18·14	0876	0296	7·93	0321	0024	...	...	...	76·14	4480	0674
23	8·22	0162	0044	9·53	0325	0023	43·13	1294	0283	10·48	0227	0034	13·25	0459	0045	53·69	1047	0255
24	3·32	0116	0023	...	...	...	8·68	0627	0067	10·60	0294	0023	11·59	0242	0056	...	...	...
25	20·29	0500	0221	9·91	0259	0032	17·50	0634	0068	23·90	0644	0153	29·69	0629	0176	9·32	0192	0042
26	7·63	0136	0024	8·44	0301	0028	...	...	...	9·39	0486	0074	49·56	1040	0524	4·27	0113	0015
27	11·32	0263	......	8·07	0228	0082	12·53	0556	0067	21·16	0673	0101	22·84	0848	0142	14·30	0367	0015
28	...	...	...	17·02	0417	0106	13·06	0421	0052	...	...	...	17·58	0315	0161	18·76	0385	0127
29	7·47	0153	0054	39·01	1184	0293	11·48	0368	0034	11·94	0428	0082	...	...	...	14·33	0188	0038
30	8·33	0211	0043	49·40	2573	0585	9·48	0336	0021	10·41	0427	0031	27·61	0750	0381	4·95	0125	0018
31	18·55	0426	0054	...	...	...	11·66	0350	0025	21·45	0774	0048						
	FEBRUARY.			APRIL.			JUNE.			AUGUST.			OCTOBER.			DECEMBER.		
1	24·89	0847	0123	16·14	0739	0207	14·82	0413	0032	21·05	1833	0254	80·61	2337	0639	...	...	...
2	23·90	0725	0197	23·14	0630	0236	...	...	...	22·39	0692	0196	25·19	0738	0247	12·07	0144	0016
3	19·89	0830	0128	30·11	1163	0229	10·20	0350	0021	17·69	0599	0156	16·67	0321	0090	4·53	0162	0018
4	...	...	...	16·73	0428	0128	8·41	0260	0033	...	...	...	11·83	0293	0049	29·13	0412	0053
5	34·09	0774	0181	31·08	0343	0060	11·93	0417	0023	9·94	0395	0068	13·61	0297	0051	10·04	0231	0066
6	16·55	0736	0114	32·13	0521	0220	12·49	0360	0040	9·12	0354	0041	...	...	...	4·71	0179	0010
7	25·33	0531	0068	...	...	...	12·99	0307	0037	10·09	0214	0023	11·06	0440	0030	5·92	0105	0015
8	17·04	0508	0134	13·53	0315	0037	11·65	0396	0030	12·11	0276	0034	12·41	0448	0050	...	...	...
9	10·36	0245	0084	9·87	0353	0028	...	...	...	22·26	0993	0250	8·75	0204	0024	3·54	0109	0010
10	17·62	0272	0098	14·75	0381	0025	11·33	0428	0039	13·67	0606	0071	7·04	0211	0017	8·20	0157	0028
11	...	...	...	16·04	0224	0050	10·78	0402	0082	...	...	...	6·73	0245	0017	7·60	0120	0015
12	8·10	0209	0024	9·68	0214	0022	11·53	0291	0028	12·24	0323	0053	8·50	0256	0014	3·55	0105	0010
13	5·20	0168	0021	10·49	0230	0030	13·56	0288	0032	14·63	0262	0043	...	...	...	4·14	0123	0015
14	3·10	0104	0012	...	...	...	12·48	0245	0032	10·10	0239	0017	11·21	0223	0017	17·54	0596	0245
15	8·52	0155	0040	15·83	0427	0041	10·56	0400	0036	9·64	0351	0032	9·42	0192	0029	...	...	...
16	10·36	0123	0016	8·61	0197	0049	...	...	...	28·49	0484	0035	9·39	0256	0024	15·80	0431	0071
17	13·90	0351	0039	42·23	2272	0587	20·67	0581	0124	14·41	0482	0058	10·89	0244	0049	4·91	0105	0024
18	...	...	...	16·47	0767	0151	14·18	0554	0080	...	...	...	11·28	0256	0025	9·32	0301	0018
19	3·36	0115	0013	8·81	0392	0033	12·62	0329	0026	11·28	0347	0027	7·88	0304	0028	21·46	0365	0062
20	4·89	0099	0033	10·50	0342	0021	11·23	0510	0054	9·88	0399	0029	...	...	...	32·83	0703	0108
21	5·56	0139	0014	...	...	...	19·99	0448	0090	11·26	0385	0025	56·05	2414	0682	24·98	0458	0135
22	9·41	0449	0064	10·67	0351	0035	9·46	0270	0044	23·00	0591	0207	17·51	0256	0049	...	...	...
23	7·45	0130	0034	11·26	0347	0064	...	...	...	34·41	1158	0315	15·72	0252	0098	6·66	0130	0026
24	5·77	0160	0013	10·97	0361	0035	9·26	0284	0030	18·28	0409	0125	14·09	0214	0067	4·84	0111	0016
25	...	...	...	47·93	1842	0461	12·53	0314	0042	...	...	...	50·94	0805	0286	5·18	0130	0016
26	7·70	0122	0022	25·28	1070	0244	13·37	0388	0034	12·46	0316	0055	49·78	1306	0304	18·14	0293	0044
27	7·27	0154	0028	32·16	1186	0223	9·78	0307	0038	12·05	0350	0036	...	...	...	9·31	0388	0034
28	21·35	0699	0084	...	...	...	10·55	0367	0031	12·47	0379	0043	13·33	0284	0135	13·76	0326	0021
29	29·16	0882	0239	18·70	0704	0121	18·53	0596	0046	19·11	0491	0170	17·11	0489	0064	...	...	...
30				13·48	0409	0112	...	...	...	28·20	0918	0295	11·42	0252	0026	42·23	1112	0174
31										27·45	0515	0214	11·61	0325	0050	16·37	0413	0106

As a very careful watch was maintained over the smallest irregularities of motion in the declination, bifilar, and balance magnets, throughout the whole of the year 1844, it is believed that the preceding Table contains a near approximation to the absolute ranges of the three magnetic elements for each civil observation-day of the year 1844.

TABLE LXI.—List of Auroræ seen at Makerstoun in the year 1844.

Moon's Age.	Date, 1844.	Character.	Moon's Age.	Date, 1844.	Character.
d.	d. h. h.		d.	d. h. h.	
23	Feb. 11 13—14	Faint.	25	Aug. 9 11	Faint.
4	22 8	Id.	20	Oct. 2 8—10	Low belt of light.
13	March 2 9	Id.	23	5 10—11	Faint.
18	7 8—10	Arch with Streamers.	10	20 14—18	Vivid.
20	9 13	Rather bright light.	1	Nov. 11 6—13	Arch and Streamers.
23	12 11	Faint.	2	12 14	Faint.
12	29 11—16	Vivid.	3	13 10	Id.
19	April 5 12—14	Arch with Streamers.	6	16 10—12	Arch, Streamers, &c.
0	17 11—12	Streamers and homogeneous light.	8	18 9	Faint.
21	May 8 11—12	Faint.	14	24 13	Portion of an arch.
4	21 12	Id.	24	Dec. 4 8	Faint.
5	22 11	Id.	20	29 10—14	Vivid.
18	Aug. 2 14	Id.	22	31 15	Faint.

Several of the auroræ noted faint were marked as somewhat uncertain, on account of remaining twilight or clouds; there can be little doubt, however, that in every case they were real auroræ, as they were accompanied by more or less marked magnetic disturbances.

THE AURORA BOREALIS.

The previous Table contains a list of all the auroræ observed at Makerstoun in the year 1844. The number is too small to expect from it alone any general results; but as it is believed that a discussion of the number seen gives nearly the same results as will be obtained from more extensive series, the conclusions are stated here.

The number of auroræ boreales seen at Makerstoun in 1844 was 26. The numbers seen in each month were as follow:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0	2	5	2	3	0	0	2	0	3	6	3

The number is zero in June and July; the shortness of the night and brightness of the twilight would of themselves diminish the number observed in these months; for the opposite reason we should expect a greater number about the winter solstice: this, however, is not the case,—the greatest number occurs in the months of March and November. Between the summer solstices of 1843 and 1848, 5 years, 85 auroræ were seen at Makerstoun, which, considering the year in 4 quarters each of which has a solstice or equinox at its centre, occurred as follow:—

Vernal equinox, 32; Summer solstice, 6; Autumnal equinox, 23; Winter solstice, 24.

Although the quarter at the winter solstice is so much more favourable for seeing auroræ, on account of the greater length of the night, the average number at the equinoxes is greatest.

This result was long ago obtained by Mairan in his Traité de l'Aurore Boréale, and has lately been obtained by M. Hansteen from observations of nearly 300 auroræ seen in the years 1837–1846 at Christiania.* It is, of course, partly accidental, that there is an approximation to the law distinctly evident in the single year's observations for 1844: the fact is stated chiefly in order to point out its connection with a result of the previous discussions. The law of the frequency of auroræ is the same as that of the intensity

* Mémoires de l'Académie Royale de Belgique, tome xx. Kämtz, also, in his Complete Course of Meteorology (translation by Walker, p. 458), gives a Table, comprehending 3253 auroræ. The following are the numbers by Kämtz and Hansteen:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Kämtz, ...	229	307	440	312	184	65	87	217	405	497	285	225
Hansteen,...	29	31	47	34	2	0	0	17	35	33	34	23

of magnetic disturbances; the latter have their greatest value near the equinoxes, and their least value near the solstices.

When the numbers for 1844 are combined with reference to the moon's age into four quarters, two of which have the epochs of new and full moon in the middle, we obtain the average for each day of the moon's age as follows:—

$27^d - 3^d$ New Moon,... 0·40. $4^d - 11^d$... 0·75. $12^d - 18^d$ Full Moon,... 0·86. $19^d - 26^d$... 1·38.

The same law of variation is obtained from the 91 auroræ seen between January 1843 and June 1848; these give the following mean numbers:—

$27^d - 3^d$ New Moon,... 1·90. $4^d - 11^d$...2·62. $12^d - 18^d$ Full Moon,... 3·43. $19^d - 26^d$... 4·00.

If we suppose that the number of auroræ should be the same at all ages of the moon, then we would expect, that on account of the great number of faint auroræ rendered invisible by the moonlight, the greatest number would be seen about new moon. This is not the case; the greatest number has been seen in the quarter intermediate between full moon and new moon; and this conclusion, it is believed, will be obtained from larger series of observations. Since, then, the greatest number of auroræ are seen between full and new moon, it is certain that the greatest number occur nearer full moon than the epoch of visible maximum; and it is probable that the greatest number actually occurs at full moon, though the moonlight will always render a direct determination of the fact impossible.* It appears also from Table LXI., that the greatest numbers of auroræ occur before midnight. As actual measures of the intensity cannot be easily taken, it can only be stated as a generally observed fact, that the maximum brilliancy of auroræ occurs between 8^h and 11^h P.M. Both the probable result for the moon's age and the other result for the diurnal law, agree with the laws deduced for the magnetic disturbance in the preceding pages; the magnetic disturbance is a maximum at full moon, and the disturbance of the *direction* of the magnetic force is a maximum about $9^h\ 10^m$ P.M., the time of maximum frequency and intensity of the aurora; there can be little hesitation, therefore, in saying, that the laws of the aurora borealis may be concluded from those for the magnetic disturbance, and *vice versa*. In every case of *observed* disturbance, including disturbances of the most minute character, in the year 1844, when the sky was sufficiently free from clouds and moonlight, and twilight absent, the aurora was seen; this remark, I believe, will apply to the observations in other years. It is difficult, indeed, to understand the cause of the doubt which remained so long with respect to the fact of this simultaneity; some farther evidences of its generality may be noticed at another time.

* It is worth referring to the past year, as giving an illustration of the law of aurora and disturbance, as related to the moon's age. The following is a list of all the auroræ seen at Makerstoun, in the year between the solstices of 1847 and 1848:—

1847.	Aug. 22.	Faint Aurora,...............	3	days before	Full Moon.
	Sept. 27.	Brilliant Aurora,.........	3	... after	....
	... 29.	Idem.	5	... after	....
	Oct. 24.	Idem.	1	... after	....
	Nov. 19.	Idem.	3	... before	....
	Dec. 20.	Idem.	1	... before	....
1848.	Feb. 20.	Idem.	1	... after	....
	... 21.	Idem.	2	... after	....
	... 22.	Idem.	3	... after	....
	Mar. 17.	Faint Aurora,...............	2	... before	....
	... 19.	Brilliant Aurora, ...	0	... .	....
	... 21.	Idem.	2	... after	....
	... 24.	Faint Aurora,...............	5	... after	....
	Apr. 17.	Brilliant Aurora, ...	1	... before	....
	29.	Rather Faint Aurora,......	11	... after	....
	May 10.	Faint Aurora, ...	8	... before	....
	18.	Brilliant Aurora, ...	0	... .	....

The auroræ marked brilliant were the most beautiful and vivid, despite the moonlight, ever observed at Makerstoun, and they were accompanied by magnetic disturbances of the same character,—the largest, it is believed, ever observed.

Neglecting the faint auroræ, it will be seen that in 8 lunations brilliant auroræ were observed within three days of full moon, only one brilliant aurora having been seen at Makerstoun farther from full moon,—namely, that of September 29. It is conceived that these observations of themselves give a great *probability* to the conclusion, that the maximum for the aurora and magnetic disturbance is at full moon. It is not, of course, supposed that brilliant auroræ occur only near full moon, but that they occur more frequently at that than at any other epoch; it should be remembered that what may be considered a vivid aurora in the absence of moonlight, would become faint in its presence, and *vice versa*.

ABSTRACTS OF THE RESULTS

OF THE

METEOROLOGICAL OBSERVATIONS,

MADE AT THE OBSERVATORY OF

GENERAL SIR T. M. BRISBANE, BART.,

MAKERSTOUN.

1844.

The observations of the dry and wet bulb thermometers were usually made about 1^m before the hour of Göttingen mean time, that is about 9^m after the Makerstoun hour; the observations of the barometer were made about 1^m or 2^m after the hour of Göttingen mean time, that is about 11^m or 12^m after the hour at Makerstoun. The hour, astronomical reckoning, without the additional minutes, of Makerstoun mean time is given in the Tables: in the remarks, the observation has been supposed to be made 10^m after the Makerstoun hour, and civil reckoning is used.

TABLE I.—Daily, Weekly, and Monthly Means of the Temperature of the Air, as deduced from the readings of the Dry Bulb Thermometer, for 1844.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	°	°	°	°	°	°	°	°	°	°	°	°
1	29·8	29·3	38·0	44·2	52·1	48·2	51·9	55·3	[57·3]	52·8	45·6	[38·5]
2	25·8	31·0	36·4	46·5	54·5	[50·8]	54·1	55·0	58·8	53·0	43·9	37·0
3	33·8	30·2	[34·8]	44·5	51·3	51·6	53·4	51·0	54·4	54·1	[44·2]	36·2
4	34·7	[28·5]	34·5	40·0	45·8	53·4	49·9	[54·9]	58·6	49·5	42·5	32·1
5	45·4	26·0	30·8	38·9	[51·2]	56·1	53·0	57·6	58·3	45·1	42·7	26·0
6	42·5	23·1	32·5	39·2	55·1	60·1	52·6	55·7	58·1	[47·0]	43·0	22·3
7	[38·5]	31·4	32·7	[44·3]	51·2	58·2	[53·4]	54·6	60·7	41·1	41·2	24·0
8	36·8	32·8	34·9	48·2	49·2	59·2	51·6	55·5	[56·1]	52·8	43·8	[27·7]
9	33·6	34·8	44·7	51·9	50·1	[57·2]	54·5	54·2	54·4	49·2	44·7	30·6
10	38·2	32·2	[36·8]	47·8	47·2	54·3	56·0	52·2	52·5	52·3	[41·8]	32·8
11	40·3	[34·6]	40·1	45·2	49·3	54·6	56·2	[54·5]	52·6	49·4	39·1	30·8
12	41·6	31·2	34·3	43·8	[50·4]	57·1	54·1	55·6	51·8	49·8	39·6	30·5
13	34·5	34·8	34·4	48·4	55·9	58·3	52·5	54·3	50·4	[49·7]	42·7	29·6
14	[35·2]	41·6	36·0	[46·8]	51·0	54·6	[53·2]	55·5	52·0	49·3	41·5	34·4
15	27·9	42·8	33·2	49·8	48·7	53·0	50·3	55·0	[51·4]	48·7	49·5	[34·2]
16	31·1	40·0	33·0	44·6	49·3	[52·8]	53·7	54·5	57·3	48·6	50·4	35·7
17	36·0	40·8	[35·2]	48·8	41·9	50·5	52·7	52·3	50·1	47·8	[48·1]	37·5
18	41·6	[35·6]	31·7	47·2	39·9	51·2	51·5	[54·1]	47·0	43·5	50·2	37·7
19	39·7	35·5	39·9	51·0	[45·2]	49·3	53·0	53·7	48·7	38·0	49·8	32·3
20	34·3	29·1	37·5	52·8	46·1	51·8	53·7	55·9	47·4	[40·3]	47·4	23·8
21	[37·1]	25·7	35·9	[48·8]	47·7	57·4	[58·3]	53·0	42·9	37·8	38·3	28·5
22	37·2	23·3	42·2	47·0	46·1	58·4	62·8	51·9	[46·6]	39·2	31·8	[30·5]
23	35·7	28·9	40·6	48·1	46·1	[54·2]	63·8	54·5	43·8	35·7	39·4	34·7
24	34·4	31·0	[42·6]	46·7	48·4	58·6	61·8	53·0	49·1	35·5	[37·6]	32·3
25	42·3	[29·5]	42·3	49·0	48·6	50·6	63·8	[52·3]	47·6	44·3	30·6	31·2
26	41·0	29·1	45·4	47·5	[46·8]	48·7	60·6	52·7	55·9	46·4	37·4	32·1
27	47·5	29·2	49·1	45·7	46·2	51·1	63·4	49·1	57·3	[43·1]	48·2	31·3
28	[40·3]	35·2	42·5	[48·2]	45·1	55·2	[58·5]	52·6	53·9	40·5	46·1	29·5
29	42·2	36·5	47·5	48·8	46·2	53·6	56·4	54·5	[53·4]	44·3	42·1	[32·1]
30	38·5		43·8	46·0	47·8	[53·2]	52·0	57·1	47·8	47·6	37·7	35·2
31	30·5		[44·8]		47·6		54·8	60·3		47·8		34·4
Mean	36·92	32·22	38·23	46·60	48·46	54·20	55·56	54·32	52·46	45·71	42·66	31·63

The *observations* of the dry and wet bulb thermometers, from pages 172–308, are not corrected for the errors of the thermometers; the corrections have been applied for the above and following Tables.

Annual Variation of Temperature.—The monthly means at the foot of Table I. are slightly different from the true monthly means, on account of the want of observations on the Sundays; the difference, however, may be obtained with sufficient accuracy from the observations of the register maximum and minimum thermometers. The monthly mean temperatures deduced from all the observations of the register thermometers are as follow:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
36°·06	32°·73	38°·73	47°·25	48°·27	55°·20	56°·06	55°·63	52°·86	46°·36	42°·07	32°.14

when the observations of the register thermometers on Sundays are omitted, the means are—

36°·63	32°·47	38°·60	47°·08	48°·69	55°·26	56°·07	55°·87	53°·02	46°·33	41°·88	31°·73

The differences between the two series are—

+0°·43	+0°·26	+0°·13	+0°·17	+0°·03	−0°·06	−0°·01	−0°·24	−0°·16	+0°·03	+0°·19	+0°·41

When these differences which are due to the temperatures on Sundays are applied as corrections to the means at the foot of Table I., we obtain the following as the mean temperatures for each month of 1844 :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
37°·35	32°·48	38°·36	46°·77	48°·49	54°·14	55°·55	54°·08	52°·30	45°·74	42°·85	32°·04

The temperature of the air in 1844 was a maximum in July and a minimum in December and February. The variation of temperature for 1844 has the mean form; the three months having the highest mean temperature are June, July, and August, and the three having the lowest mean temperature are December, January, and February; the means for the meteorological quarters are—

Winter,	Dec., Jan., Feb., ...	33°·99	Summer,	June, July, Aug.,	54°·59
Spring,	March, April, May,	44°·52	Autumn,	Sept., Oct., Nov.,	45°·04

The mean temperature for the year 1844 = 45°·04

Differences of the Daily Mean Temperatures from the Monthly Means.—The following are the average differences for each month of 1844 :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
4°·30	4°·20	4°·43	2°·62	2°·69	3°·00	3°·33	1°·62	2°·07	4°·50	3°·90	3°·20

The difference is least in the months during which the sun is north of the equator: the mean for the six winter months, October–March, being 4°·09, and for the six summer months, April–September, being 2°·55. The oscillations of the daily mean temperature do not appear to be at all related to the variations of the diurnal range.

Approximations to the Daily Mean Temperature.—The following are the mean errors, for each month of 1844, of the mean temperature for a civil day, as obtained from the observations of the self-registering thermometers by the formulæ

$$t = \frac{m_1 + \mathrm{M}}{2} + c \quad \text{and } t = \frac{\frac{m_1 + m_2}{2} + \mathrm{M}}{2} + c$$

where t is the approximate mean temperature for the civil day for which m_1 is the minimum temperature of the morning, m_2 is the minimum temperature on the morning following; M is the maximum temperature, and c is the correction of the *monthly* mean, obtained by the previous portions of the formulæ, to the true mean, (see Table IV.)

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1st formula,	1°·40	1°·34	1°·05	1°·13	1°·29	1°·06	0°·75	0°·97	1°·17	1°·22	1°·69	1°·01
2d formula,	0°·97	0°·99	1°·22	0°·82	1°·04	0°·98	0°·61	0°·92	1°·10	0°·91	1°·05	0°·60

The average of the errors by the first formula is 1°·17, and by the second it is 0°·93; the second formula is therefore superior to the first; the probable error by the second formula does not exceed one degree in any month. The values of the corrections c may be determined from two or three years' observation. It is probable that better approximations to the mean temperature of the *astronomical* day would be obtained by means of the formula

$$t = \frac{\frac{\mathrm{M}_1 + \mathrm{M}_2}{2} + m}{2} + c$$

where M_1 and M_2 are the maxima near the commencement and near the termination of the day, m being the intermediate minimum.

TABLE II.—Hourly Means of the Temperature of the Air for each Month in 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h.	°	°	°	°	°	°	°	°	°	°	°	°
12	35·4	29·9	35·3	42·0	42·7	49·6	50·4	50·0	48·5	42·9	41·8	31·4
13	35·4	30·0	35·2	41·5	42·6	49·2	49·5	49·3	48·1	42·9	42·1	31·3
14	35·3	29·6	35·3	40·8	41·7	48·8	49·2	49·0	47·7	42·3	41·9	31·2
15	35·1	29·7	34·9	40·5	41·3	48·5	48·8	48·4	47·2	42·3	41·8	31·0
16	35·1	29·7	34·5	40·2	41·3	49·1	48·9	48·0	46·8	42·2	41·6	30·9
17	34·7	30·2	34·2	40·3	42·4	50·0	50·2	48·2	46·9	41·8	41·7	30·9
18	35·2	30·1	34·0	41·7	44·6	51·7	52·4	50·0	47·5	42·1	41·7	30·8
19	35·7	30·0	35·1	43·6	46·8	53·5	54·7	52·0	49·8	42·4	41·7	30·9
20	36·0	30·5	36·9	46·1	48·6	55·1	56·9	54·3	52·5	44·3	41·8	30·8
21	36·5	32·3	38·9	48·9	50·4	56·0	58·1	56·6	54·8	46·3	42·9	30·8
22	37·6	34·2	40·6	51·6	51·9	57·9	59·3	58·4	56·6	48·3	43·6	31·7
23	38·9	35·5	41·8	52·9	53·7	59·8	60·7	59·8	57·9	50·0	44·3	32·6
0	40·1	36·1	42·9	53·7	55·0	59·9	61·1	60·9	58·7	51·1	44·9	33·5
1	40·6	37·0	43·4	53·9	55·8	60·5	61·2	61·2	59·1	51·5	45·3	34·3
2	40·5	37·0	43·7	54·1	56·0	59·8	61·4	61·1	59·0	51·6	45·1	33·9
3	39·7	35·8	43·6	53·7	55·9	58·9	61·7	61·0	58·5	50·6	44·2	32·9
4	38·4	34·6	42·6	52·3	55·0	58·4	60·8	60·5	57·3	49·2	43·3	31·9
5	37·6	32·9	40·9	50·8	53·6	57·4	60·0	58·5	55·4	47·1	42·5	31·6
6	36·7	32·2	39·1	49·0	51·8	56·0	58·7	56·9	53·9	46·1	42·4	31·2
7	36·6	31·9	38·1	46·6	49·6	54·7	57·1	54·6	52·6	45·3	42·4	31·2
8	36·4	31·4	37·2	45·4	47·4	53·1	54·8	53·1	51·2	44·8	41·9	31·0
9	36·4	31·1	36·5	43·8	45·9	51·9	53·5	51·7	50·5	43·9	41·6	31·1
10	36·1	30·7	36·2	42·9	44·8	51·0	52·2	50·7	49·6	43·7	41·5	30·9
11	36·3	30·8	36·0	42·1	43·8	50·3	51·7	50·0	49·1	43·7	41·7	31·0

It should be remarked, that the changes of temperature between $11^h\ 10^m$ P.M., and $12^h\ 10^m$ A.M., are slightly inaccurate in Table II.; this is due to the variations of temperature between $11^h\ 10^m$ P.M. of the Saturdays, and $12^h\ 10^m$ A.M. of the Mondays, and to the difference between the temperature at $12^h\ 10^m$ A.M., the first hour of the month,—and $11^h\ 10^m$ P.M., the last hour. The changes of temperature between $11^h\ 10^m$ P.M., and $12^h\ 10^m$ A.M., as determined by the observations for each month, where the interval was only one hour, are as follow, namely, temperature at $12^h\ 10^m$ A.M., *minus* temperature at $11^h\ 10^m$ P.M.:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
0°·00	−0°·15	−0°·20	−0°·24	−0°·85	−0°·39	−0°·77	−0°·33	−0°·47	−0°·36	+0°·18	+0°·05	−0°·30

The changes actually exhibited in Table II. are—

−0°·9	−0°·9	−0°·7	−0°·1	−1°·1	−0°·7	−1°·3	0°·0	−0°·6	−0°·8	+0°·1	+0°·4	−0°·55

Diurnal Variation of Temperature.—When the true changes of temperature at midnight are remembered, it will be seen that in the three months of November, December, and January, the temperature varies little more than 0°·5 for five or six hours before and after midnight; the minimum in these months, therefore, is not very distinctly marked. The following are the approximate epochs for each month of 1844:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Min. A.M.	$5^h\ 10^m$	2^h—4^h	$6^h\ 10^m$	$4^h\ 30^m$	$3^h\ 40^m$	$3^h\ 10^m$	$3^h\ 30^m$	$4^h\ 30^m$	$4^h\ 30^m$	$5^h\ 10^m$	10^h—4^h	10^h—9^h
Max. P.M.	$1^h\ 30^m$	$1^h\ 40^m$	$2^h\ 20^m$	$2^h\ 10^m$	$2^h\ 10^m$	$1^h\ 10^m$	$3^h\ 10^m$	$1^h\ 30^m$	$1^h\ 30^m$	$2^h\ 0^m$	$1^h\ 20^m$	$1^h\ 20^m$

The following Table contains the means for the astronomical quarters (November, December, and January being winter), and for the year.

TABLE III.—Hourly Means of the Temperature of the Air for each Astronomical Quarter, and for the Year 1844.

Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year.	Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year.
h.	°	°	°	°	°	h.	°	°	°	°	°
12	36·20	35·73	47·57	47·13	41·66	0	39·50	44·23	58·67	56·90	49·82
13	36·27	35·57	47·10	46·77	41·42	1	40·07	44·77	59·17	57·27	50·32
14	36·13	35·23	46·57	46·33	41·07	2	39·83	44·93	59·07	57·23	50·27
15	35·97	35·03	46·20	45·97	40·79	3	38·93	44·37	58·83	56·70	49·71
16	35·87	34·80	46·43	45·67	40·69	4	37·87	43·17	58·07	55·67	48·69
17	35·77	34·90	47·53	45·63	40·96	5	37·23	41·53	57·00	53·67	47·36
18	35·90	35·27	49·57	46·53	41·82	6	36·77	40·10	55·50	52·30	46·17
19	36·10	36·23	51·67	48·07	43·02	7	36·73	38·87	53·80	50·83	45·06
20	36·20	37·83	53·53	50·37	44·48	8	36·43	38·00	51·77	49·70	43·97
21	36·73	40·03	54·83	52·57	46·04	9	36·37	37·13	50·43	48·70	43·16
22	37·63	42·13	56·37	54·43	47·64	10	36·17	36·60	49·33	48·00	42·52
23	38·60	43·40	58·07	55·90	48·99	11	36·33	36·30	48·60	47·60	42·21

These means give the following epochs of minimum and maximum :—

	Winter.	Spring.	Summer.	Autumn.	Year 1844.
Min.	$5^h\ 10^m$ A.M.	$4^h\ 30^m$ A.M.	$3^h\ 20^m$ A.M.	$4^h\ 50^m$ A.M.	$4^h\ 0^m$ A.M.
Max.	$1^h\ 20^m$ P.M.	$2^h\ 0^m$ P.M.	$1^h\ 25^m$ P.M.	$1^h\ 40^m$ P.M.	$1^h\ 30^m$ P.M.

The minimum temperature occurs earliest in summer, and latest in winter; it occurs about 3 hours before sunrise in winter, 2 hours before it in spring, $\frac{1}{4}$ hour in summer, and about 1 hour before sunrise in autumn. The maximum temperature occurs nearest noon in winter, and nearer noon in summer than at the equinoxes. This result was obtained from the two hourly observations for 1843, p. 265.

In order to examine the variations of temperature about midnight in the winter group, we may connect the mean at 12^h with that at 11^h, by means of the corrections given above; from these, the mean at 12^h in winter is greater than the mean at 11^h, by 0°·08; from this, and the above means for the winter group, we find the *variations* of temperature from $9^h\ 10^m$ P.M., till $3^h\ 10^m$, to be as follow :—

9^h	10^h	11^h	12^h	1^h	2^h	3^h
0°·20	0°·00	0°·16	0°·24	0°·31	0°·17	0°·01

From these, there appears to have been a secondary maximum of temperature in winter at $1^h\ 10^m$ A.M., the secondary minimum occurring at $10^h\ 10^m$ P.M. This result is exhibited in the means for each of the months November and December, and also in those for January, the true change from 11^h to 12^h being considered.

The maximum temperature for the year 1844 occurs at the same hour as for 1843,—namely, $1^h\ 30^m$ P.M. The mean temperature for each month occurs at the following times :—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
A.M.,......	$9^h\ 34^m$	$9^h\ 7^m$	$8^h\ 49^m$	$8^h\ 22^m$	$8^h\ 5^m$	$7^h\ 34^m$	$7^h\ 33^m$	$8^h\ 11^m$	$8^h\ 10^m$	$8^h\ 51^m$	$8^h\ 56^m$	$10^h\ 5^m$
P.M.,......	5 55	6 8	7 4	7 8	7 42	7 28	7 50	7 18	7 16	6 41	5 0	5 6
Intervals,	8 21	9 1	10 15	10 46	11 37	11 54	12 17	11 7	11 6	9 50	8 4	7 1

The intervals are greatest in the three months constituting the astronomical summer, and least in the three months constituting the astronomical winter. December has the least, and July has the greatest, critical interval. The following are the epochs of *mean temperature* for the astronomical quarters :—

	Winter.	Spring.	Summer.	Autumn.	Year 1844.
A.M.,............	$9^h\ 33^m$	$8^h\ 38^m$	$7^h\ 44^m$	$8^h\ 23^m$	$8^h\ 26·5^m$
P.M.,............	5 31	7 3	7 42	7 10	7 18·3
Intervals,......	7 58	10 25	11 58	10 47	10 51·8

TABLE IV.—Errors of the Approximate Mean Temperatures, deduced from one or two Daily Observations, for each Month, and the Year 1844.

Months and Year.	True Mean.	Approximate Means (+) greater, or (−) less than true Means.								
		Max. and Min.	17^h 10^m and 4^h 10^m.	21^h 40^m and 10^h 10^m.	21^h 40^m and 9^h 40^m.	22^h 10^m and 11^h 10^m.	22^h 10^m and 10^h 10^m.	17^h 10^m and 23^h 10^m.	21^h 10^m and 9^h 10^m.	7^h 10^m.
January	36°·92	−0°·29	−0°·37	−0°·35	−0°·27	+0°·02	−0°·07	−0°·12	−0°·47	−0°·33
February	32·22	+0·25	+0·18	−0·25	−0·13	+0·28	+0·23	+0·63	−0·52	−0·32
March	38·23	+0·37	+0·17	−0·26	−0·18	+0·10	+0·17	−0·23	−0·53	−0·10
April	46·60	+0·48	−0·30	−0·03	+0·20	+0·25	+0·65	0·00	−0·25	0·00
May	48·46	+0·23	+0·24	−0·49	−0·21	−0·59	−0·11	−0·41	−0·31	+1·16
June	54·20	+1·06	0·00	−0·23	0·00	−0·11	+0·25	+0·70	−0·25	+0·49
July	55·56	+0·51	−0·05	−0·11	+0·21	−0·05	+0·19	−0·11	+0·24	+1·55
August	54·32	+1·55	+0·03	−0·22	+0·03	−0·14	+0·23	−0·32	−0·17	+0·26
September	52·46	+0·56	−0·36	+0·19	+0·41	+0·36	+0·64	−0·06	+0·19	+0·13
October	45·71	+0·62	−0·21	−0·21	−0·16	+0·32	+0·29	+0·19	−0·61	−0·38
November	42·66	−0·78	−0·16	−0·29	−0·26	0·00	−0·11	+0·34	−0·35	−0·25
December	31·63	+0·10	−0·23	−0·56	−0·51	−0·27	−0·33	+0·12	−0·68	−0·42
Year	44·91	+0·39	−0·09	−0·23	−0·07	+0·01	+0·17	+0·06	−0·31	+0·15
The 12 Months.										
Mean of Errors		0·57	0·18	0·26	0·21	0·21	0·27	0·27	0·38	0·45
Range of Errors		2·33	0·61	0·75	0·92	0·95	0·98	1·11	0·92	1·99

Approximations to the Monthly Mean Temperatures.—The values of the approximations to the monthly mean temperature, from observations at two hours each day, may be considered inversely proportional to the *mean* of the errors; they may also be considered inversely proportional to the *range* of the errors, whence the values will be inversely proportional to their product. By means of this measure, we find the values of the approximations to be in the following order, commencing with the highest:—

1st. 5^h 10^m A.M., and 4^h 10^m P.M. 2d. 9^h 40^m A.M., and 10^h 10^m P.M. 3d. 9^h 40^m A.M., and 9^h 40^m P.M.
4th. 10^h 10^m A.M., and 11^h 10^m P.M. 5th. 10^h 10^m A.M., and 10^h 10^m P.M. 6th. 5^h 10^m A.M., and 11^h 10^m A.M.
7th. 9^h 10^m A.M., and 9^h 10^m P.M. 8th. 7^h 10^m P.M. 9th. Max. and Min.

The best approximation to the mean for the year is given by the observations at 10^h 10^m A.M. and 11^h 10^m P.M., which differs only 0°·01 from it. If the approximations to the mean for the year should be nearly constant from year to year, then the best approximations to the monthly means should be determined by employing the mean error *after* correcting by the yearly difference. Thus, if the monthly means for 9^h 40^m A.M. and 10^h 10^m P.M., are corrected by +0·23—the correction for the yearly mean from the observations at the same hours—the average error of the monthly means is only 0°·13.

The following are the errors of the yearly means, as deduced from each couple of homonymous hours:—

A.M. and P.M.	12^h 10^m	1^h 10^m	2^h 10^m	3^h 10^m	4^h 10^m	5^h 10^m	6^h 10^m	7^h 10^m	8^h 10^m	9^h 10^m	10^h 10^m	11^h 10^m
	+0°·83	+0°·96	+0°·76	+0°·34	−0°·22	−0°·75	−0°·92	−0°·87	−0°·69	−0°·31	+0°·17	+0°·69

The following are the errors of the yearly means, as deduced from two observations made at intervals of 11^h, nearly the critical interval for the year:—

11^h 10^m P.M. 10 10 A.M.	12^h 10^m A.M. 11 10 A.M.	1^h 10^m A.M. 12 10 P.M.	2^h 10^m 1 10	3^h 10^m 2 10	4^h 10^m 3 10	5^h 10^m 4 10	6^h 10^m 5 10	7^h 10^m 6 10	8^h 10^m 7 10	9^h 10^m 8 10	10^h 10^m 9 10
+0°·01	+0°·41	+0°·71	+0°·78	+0°·62	+0°·29	−0°·09	−0°·32	−0°·32	−0°·14	+0°·09	+0°·49

The average of the errors for the 12 homonymous hours is 0°·63, and the range of errors is 1°·88.
.... 12 couples at the critical interval is 0°·36, and the range of errors is 1°·10.

Observations at each of the following three couples of hours which are at the critical interval, give the mean for the year to 0°·01,—namely, 11^h 20^m P.M. and 10^h 10^m A.M., 5^h 20^m A.M. and 4^h 10^m P.M., and 8^h 20^m A.M. and 7^h 10^m P.M.

TABLE V.—Diurnal Ranges of Temperature, as deduced from the Hourly Observations of the Dry Bulb Thermometer, on each Civil Day of 1844.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	°	°	°	°	°	°	°	°	°	°	°	°
1	8·9	11·6	8·8	25·9	37·8	13·1	18·0	10·1	(26·0)	7·0	3·8	(6·0)
2	16·5	6·9	8·7	10·8	28·9	(10·0)	15·7	17·4	31·8	8·9	3·1	3·3
3	12·0	13·4	(7·0)	9·8	34·4	23·0	14·3	21·3	22·6	12·4	(3·4)	5·5
4	6·2	(14·0)	8·8	11·0	6·0	25·7	13·5	(24·0)	11·5	10·7	3·6	9·8
5	11·7	15·8	14·1	23·0	(15·0)	12·0	12·7	9·8	11·5	15·7	2·8	11·1
6	6·8	20·1	9·3	23·7	24·6	14·9	10·7	13·7	5·8	(18·0)	3·1	11·8
7	(10·0)	15·0	12·1	(20·0)	24·6	10·6	(20·0)	7·9	13·7	17·4	11·8	16·9
8	7·4	10·2	10·2	15·7	27·7	13·8	24·4	10·4	(5·0)	22·1	12·0	(10·0)
9	4·6	4·9	10·0	13·1	35·1	(21·0)	11·6	9·7	8·8	6·5	8·2	5·2
10	10·6	8·9	(6·0)	21·0	8·0	17·9	18·0	19·7	14·6	16·2	(6·0)	4·6
11	7·9	(14·0)	13·5	15·6	5·9	23·0	11·1	(22·0)	21·3	12·5	8·6	3·1
12	9·8	16·7	12·1	12·1	(20·0)	15·4	14·1	14·7	16·6	18·7	6·6	4·2
13	11·0	9·7	12·8	14·8	27·3	15·1	13·4	18·5	20·4	(8·0)	6·1	8·3
14	(14·0)	6·7	17·3	(18·0)	12·7	10·6	(7·0)	17·8	5·5	12·2	11·0	2·1
15	14·3	13·1	3·5	14·2	19·0	12·3	19·6	8·4	(9·0)	8·5	16·6	(3·0)
16	6·3	10·3	3·5	21·6	26·4	(22·0)	21·9	16·1	14·3	11·0	5·4	4·7
17	12·6	6·5	(17·0)	15·0	14·3	23·3	24·5	7·4	4·9	5·2	(5·0)	4·7
18	15·7	(7·0)	26·3	11·7	16·3	6·9	15·3	(16·0)	11·7	16·7	3·2	3·6
19	14·4	13·0	14·3	15·6	(15·0)	10·0	15·2	14·1	9·6	19·3	6·2	13·5
20	7·1	7·5	14·3	17·0	9·7	21·8	18·0	11·8	16·6	(17·0)	10·4	7·9
21	(12·0)	15·6	16·8	(14·0)	13·6	13·4	(16·0)	12·5	20·4	22·1	17·8	11·1
22	15·5	20·8	14·6	13·0	18·7	15·8	20·1	6·6	(22·0)	19·0	11·2	(4·0)
23	14·4	13·4	11·2	14·9	21·7	(25·0)	31·8	15·7	17·9	26·3	9·2	3·4
24	15·2	5·9	(9·0)	11·7	13·5	14·8	7·1	19·1	21·0	21·5	(14·0)	3·6
25	11·5	(10·0)	10·2	21·3	14·7	8·0	16·5	(21·0)	24·4	10·2	11·9	1·6
26	10·6	9·9	18·2	17·5	(14·0)	7·4	13·1	15·8	8·8	5·9	17·5	3·7
27	5·0	25·2	17·9	17·3	12·0	11·3	17·6	22·9	12·6	(13·0)	2·9	9·3
28	(7·0)	10·3	21·1	(30·0)	13·3	16·9	(19·0)	23·8	15·5	16·1	3·2	10·0
29	18·4	7·2	19·0	33·3	8·7	14·7	14·1	32·2	(18·0)	12·0	10·1	(10·0)
30	13·0		32·0	35·6	9·4	(26·0)	12·4	28·6	22·9	2·7	9·8	8·5
31	7·2		(15·0)		9·6		9·2	21·7		3·4		12·2
Mean	10·9	11·8	13·4	17·9	18·0	15·9	16·0	16·5	15·5	13·4	8·2	7·0

The quantities within parentheses are approximate ranges for the Sundays, deduced from the last observation of Saturday, the first of Monday, and the maximum of the register thermometer, or from the latter and the minimum of the register thermometer.

Diurnal Range of Temperature.—From the means at the foot of Table V., it appears that the mean of the diurnal ranges of temperature is less for the months about the summer solstice than for the months before and after them. The greatest mean ranges are those for April, May, and August; the least mean range is that for December. The mean of the ranges for the astronomical quarters, and for the year 1844, are as follow:—

Winter, 8°·68 Spring, 14°·40 Summer, 16°·63 Autumn, 15°·13 Year, 13°·71

The mean ranges, as deduced from the minima and *succeeding* maxima of the register thermometers, are for each month as follow:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
10°·9	11°·7	13°·1	18°·4	19°·4	18°·2	18°·7	19°·5	15°·9	13°·4	8°·4	6°·8

These means are rather larger in the summer months than those deduced from the hourly observations, but they follow the same law; the means for the astronomical quarters are—

Winter, 8°·74 Spring, 14°·43 Summer, 18°·75 Autumn, 16°·24 Year, 14°·54

From Table II. we find the diurnal range of the mean hourly temperatures for each month to be—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
5°·9	7°·4	9°·7	13°·9	14°·7	12°·0	12°·9	13·2	12°·3	9°·8	3°·8	3°·5

These ranges also follow the same law of *variation* as the means of the ranges; the ranges of the hourly mean temperature for each of the astronomical quarters, and for the year 1844, are—

Winter, 4°·30   Spring, 10°·13   Summer, 12°·97   Autumn, 11°·64   Year, 9°·63

TABLE VI.—Extremes of Temperature for each Month from the Register Thermometers; Extremes of Daily Mean Temperature, and of Diurnal Ranges, obtained from the Hourly Observations for 1844.

Month.	Extreme Temperatures.						Extremes of Daily Mean Temperature.						Extreme Diurnal Ranges.			
	Highest.		Lowest.		Range.	Mean.	Highest.		Lowest.		Range.	Mean.	Greatest.		Least.	
	d.	°	d.	°	°	°	d.	°	d.	°	°	°	d.	°	d.	°
Jan.	29	51·7	3	13·2	38·5	32·4	27	47·5	2	25·8	21·7	36·6	2	16·5	9	4·6
Feb.	15	48·2	22	11·5	36·7	29·8	15	42·8	6, 22	23·1, 23·3	19·7	32·9	27	25·2	9	4·9
March	30	61·2	18	18·2	43·0	39·7	27	49·1	5	30·8	18·3	39·9	30	32·0	15, 16	3·5
April	29	66·9	6	26·4	40·5	46·6	20	52·8	5	38·9	13·9	45·8	30	35·6	3	9·8
May	13	71·3	18	29·6	41·7	50·4	13	55·9	18	39·9	16·0	47·9	1	37·8	11	5·9
June	23	75·4	17	36·2	39·2	55·8	6	60·1	1	48·2	11·9	54·1	4	25·7	18	6·9
July	23	81·8	17	38·3	43·5	60·0	23, 25	63·8	4	49·9	13·9	56·8	23	31·8	24	7·1
Aug.	30	75·5	27	36·2	39·3	55·8	31	60·3	27	49·1	11·2	54·7	29	32·2	22	6·6
Sept.	2	76·3	22	29·7	46·6	53·0	7	60·7	21	42·9	17·8	51·8	2	31·8	17	4·9
Oct.	3	62·1	23	23·9	38·2	43·0	3	54·1	24	35·5	18·6	44·8	23	26·3	30	2·7
Nov.	17	54·2	25	23·6	30·6	38·9	16	50·4	25	30·6	19·8	40·5	21	17·8	5	2·8
Dec.	29	43·0	7	15·7	27·3	29·3	18	37·7	6	22·3	15·4	30·0	7	16·9	25	1·6

The means of the highest and lowest temperatures in each month are less than the monthly mean temperatures in the winter months, and higher in the summer months. The maximum temperature of the month is therefore more above the mean temperature in the summer months than the minimum for the month is below it; the reverse is the case for winter; the minimum then is farther below the mean temperature for the month than the maximum is above it.

Extreme Values and Ranges of Temperature for 1844.

The highest temperature of 1844 occurred	July 23.	=81°·8	Range=70°·3.	Mean=46°·6
The lowest	Feb. 22.	=11°·5		
The highest daily mean temperature occurred	July 23., 25.	=63°·8	Range=41°·1.	Mean=43°·0
The lowest	Dec. 6.	=22°·3		
The highest weekly mean temperature occurred	July 22–27.	=62°·7	Range=35°·0.	Mean=45°·2
The lowest	Dec. 5–11.	=27°·7		
The highest monthly mean temperature occurred	July	=55°·6	Range=23°·6.	Mean=43°·8
The lowest	Dec.	=32°·0		
The highest quarterly mean temperature is that for	June, July, Aug.	=54°·59	Range=20°·60.	Mean=44°·29.
The lowest	Dec., Jan., Feb.	=33°·99		

The greatest range of temperature in a civil day occurred	May 1.	=37°·8.
...... an astronomical day occurred......	April 29—30.	=39°·2.
The least range of temperature in a civil day occurred......	December 25.	= 1°·6.
...... an astronomical day occurred......	December 26–27.	= 1°·4.
The greatest range of temperature, within 30 days, occurred	Sept. 2—Sept. 22.	Range, =46°·6.
...... daily mean temperature, within 30 days, occurred	Nov. 16—Dec. 6.	=27°·9.

TABLE VII.—Daily, Weekly, and Monthly Means of the Temperature of Evaporation, as deduced from the Readings of the Wet Bulb Thermometer, in 1844.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	°	°	°	°	°	°	°	°	°	°	°	°
1	28·8	27·4	36·2	42·2	45·8	46·1	49·4	52·3	[53·9]	49·5	41·8	[37·4]
2	25·0	30·6	34·5	44·6	49·3	[48·1]	49·7	51·3	54·5	49·0	39·9	36·4
3	32·3	29·2	[32·7]	42·5	46·3	47·0	50·5	48·9	52·7	49·9	[41·8]	35·7
4	34·5	[27·6]	32·5	38·9	44·6	50·2	47·6	[52·0]	55·8	45·8	40·1	31·1
5	45·0	25·4	28·4	37·7	[47·0]	54·4	50·2	54·2	56·3	43·5	41·5	25·7
6	42·0	22·7	29·9	37·5	50·4	56·8	50·5	53·0	57·4	[43·9]	42·3	22·0
7	[38·0]	30·3	30·4	[42·2]	46·8	55·6	[50·7]	52·3	58·7	38·2	40·5	23·2
8	36·2	31·5	33·7	46·1	44·6	54·5	50·5	51·9	[53·7]	40·1	43·2	[27·3]
9	32·7	33·9	42·2	50·1	46·0	[53·3]	52·2	49·8	51·1	46·1	43·3	30·4
10	37·5	30·2	[34·6]	43·1	45·6	50·0	53·1	48·3	48·7	49·5	[40·7]	32·1
11	39·6	[33·5]	38·0	40·5	48·1	50·0	51·7	[51·3]	50·0	47·8	37·2	30·2
12	40·7	30·4	31·9	41·7	[47·0]	52·8	49·8	52·8	47·5	48·3	37·9	29·0
13	33·4	34·3	31·3	44·4	50·7	54·8	50·8	52·4	47·7	[47·5]	42·0	28·2
14	[34·6]	40·8	33·1	[43·1]	47·4	50·4	[49·7]	52·5	51·5	47·4	39·7	33·3
15	27·5	40·5	32·6	46·9	44·1	48·7	47·6	52·9	[49·1]	46·2	47·0	[33·3]
16	30·8	36·9	30·9	40·4	44·7	[50·1]	48·8	51·8	54·1	45·6	48·2	34·8
17	35·5	38·9	[33·3]	44·9	38·0	48·5	49·6	50·2	49·4	44·4	[46·0]	37·2
18	39·2	[33·5]	30·3	42·3	36·1	50·4	51·0	[51·2]	44·2	40·3	47·7	37·1
19	36·5	33·7	37·8	47·6	[41·3]	48·0	49·2	51·5	46·4	36·6	48·5	31·8
20	31·4	26·7	34·9	50·1	41·0	48·9	49·1	51·3	44·9	[38·4]	45·1	23·7
21	[35·2]	24·1	33·1	[44·8]	44·4	54·9	[54·2]	49·3	41·0	36·7	37·3	28·1
22	35·7	22·0	40·5	43·9	43·7	54·0	58·4	50·6	[44·3]	38·1	31·3	[29·7]
23	35·1	27·5	38·7	44·2	43·6	[51·7]	58·2	51·9	42·3	34·6	37·8	32·6
24	33·6	30·3	[40·2]	40·6	44·7	57·4	59·5	50·5	45·9	34·6	[36·5]	31·3
25	40·8	[28·1]	40·6	45·3	43·6	48·6	58·2	[49·1]	45·2	43·2	30·3	30·5
26	38·5	28·0	42·2	42·9	[43·5]	46·4	57·4	48·0	53·1	43·9	36·5	31·2
27	44·9	27·4	46·3	40·4	43·0	46·9	59·5	45·1	55·0	[41·6]	45·6	31·1
28	[38·2]	33·7	39·4	[43·0]	42·8	51·1	[55·1]	48·6	51·8	39·7	44·0	29·4
29	39·9	34·7	45·2	43·6	43·2	50·1	51·7	50·9	[50·5]	42·9	40·6	[31·7]
30	35·9		41·6	40·0	45·7	[49·6]	51·0	53·2	44·9	45·2	36·4	34·7
31	29·0		[42·0]		45·5		53·0	56·4		45·0		34·0
Mean	35·63	30·84	36·00	43·17	44·80	51·06	52·16	51·18	50·00	43·41	40·99	30·95

Annual Variation of the Temperature of Evaporation.—This follows the same law as the temperature of the air. The maximum occurs in July and the minimum in December and February. The means for the thermal seasons are as follow :—

Winter,	Dec., Jan., Feb.,	32°·54	Summer,	June, July, Aug.,	51°·48
Spring,	March, April, May,	41°·37	Autumn,	Sept., Oct., Nov.,	44°·72

The mean temperature of evaporation for 1844 = 42°·55

Diurnal Variation of the Temperature of Evaporation.—This, on the whole, also follows the same law as the temperature of the air. The hours of maximum and minimum for the astronomical seasons and for the year, are as follow :—

	Winter.	Spring.	Summer.	Autumn.	Year 1844.
Min.	$5^h\ 10^m$ A.M.	$4^h\ 30^m$ A.M.	$3^h\ 30^m$ A.M.	$5^h\ 0^m$ A.M.	$4^h\ 0^m$ A.M.
Max.	$1^h\ 15^m$ P.M.	$1^h\ 55^m$ P.M.	$1^h\ 40^m$ P.M.	$1^h\ 40^m$ P.M.	$1^h\ 30^m$ P.M.

The epochs for the year for the temperature of the air and of evaporation are the same, and they are nearly the same for the quarters. The secondary maximum in winter at midnight is also shewn in the means for the temperature of evaporation.

The mean temperature of evaporation for the year occurs at $8^h\ 19^m$ A.M.
.... $7^h\ 32^m$ P.M.

The interval between the two periods of mean temperature is $11^h\ 13^m$

TABLE VIII.—Hourly Means of the Temperature of Evaporation for each Month in 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h.	°	°	°	°	°	°	°	°	°	°	°	°
12	34·2	28·8	33·9	40·4	41·4	48·2	49·1	48·6	47·5	41·5	40·4	30·8
13	34·2	28·9	33·8	40·2	41·1	47·8	48·5	48·1	47·1	41·5	40·5	30·7
14	34·1	28·6	34·0	39·4	40·4	47·6	48·2	47·8	46·7	41·0	40·5	30·6
15	34·1	28·8	33·6	39·0	40·0	47·4	47·9	47·3	46·3	41·0	40·4	30·4
16	34·1	28·8	33·2	38·9	40·0	47·6	47·9	47·0	45·9	40·9	40·3	30·4
17	33·9	29·3	33·0	39·0	40·8	48·3	48·9	47·1	45·9	40·4	40·3	30·4
18	34·3	29·1	32·8	40·0	42·4	49·6	50·5	48·4	46·4	40·7	40·4	30·3
19	34·7	29·0	34·0	41·6	43·9	50·6	52·0	50·0	48·5	40·9	40·4	30·3
20	35·1	29·6	35·4	43·3	45·2	51·5	53·0	51·6	50·4	42·5	40·5	30·2
21	35·6	31·1	36·7	45·0	46·1	52·0	53·6	52·8	51·9	44·0	41·3	30·2
22	36·3	32·5	37·9	46·7	47·1	53·2	54·2	53·7	53·0	45·4	41·8	31·1
23	37·4	33·4	38·6	47·5	48·0	54·4	54·9	54·3	53·6	46·5	42·3	31·8
0	38·2	33·8	39·4	47·8	48·6	54·8	55·3	54·6	53·6	47·0	42·5	32·6
1	38·7	34·3	39·5	47·8	48·9	55·0	55·3	54·8	53·7	47·3	42·8	33·2
2	38·5	34·4	39·7	47·8	49·3	54·4	55·6	54·9	53·8	47·2	42·5	32·9
3	37·9	33·6	39·6	47·3	49·3	54·0	55·6	55·1	53·7	46·6	42·0	32·1
4	36·8	32·7	38·9	46·6	48·7	53·6	55·0	54·7	53·0	45·8	41·3	31·2
5	36·2	31·6	37·9	45·7	48·0	53·2	54·8	53·7	52·2	44·5	40·7	30·8
6	35·4	30·9	36·7	44·4	47·0	52·5	53·9	53·2	51·3	43·8	40·7	30·5
7	35·3	30·7	36·1	43·0	45·8	51·6	53·3	51·9	50·6	43·4	40·7	30·5
8	35·1	30·4	35·5	42·2	44·7	50·5	52·2	51·3	49·7	42·9	40·4	30·3
9	35·2	29·9	34·9	41·3	43·7	49·8	51·3	50·0	49·2	42·3	40·2	30·4
10	34·9	29·7	34·8	40·7	42·9	49·2	50·5	49·3	48·4	42·1	40·1	30·3
11	35·1	29·8	34·6	40·4	42·2	48·7	50·1	48·3	48·0	42·1	40·2	30·3

Diurnal Range of the Mean Temperature of Evaporation.—The ranges of the means, Table VIII., are as follow:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
4°·8	5°·8	6°·9	8°·9	9°·3	7°·6	7°·7	8°·1	7°·9	6°9	2°·7	3°·0

TABLE IX.—Hourly Means of the Temperature of Evaporation for each Astronomical Quarter, and for the Year 1844.

Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.	Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.
h.	°	°	°	°	°	h.	°	°	°	°	°
12	35·13	34·37	46·23	45·87	40·40	0	37·77	40·33	52·90	51·73	45·68
13	35·13	34·30	45·80	45·57	40·20	1	38·23	40·53	53·07	51·93	45·94
14	35·07	34·00	45·40	45·17	39·91	2	37·97	40·63	53·10	51·97	45·92
15	34·97	33·80	45·10	44·87	39·68	3	37·33	40·17	52·97	51·80	45·57
16	34·93	33·63	45·17	44·60	39·58	4	36·43	39·40	52·43	51·17	44·86
17	34·87	33·77	46·00	44·47	39·77	5	35·90	38·40	52·00	50·13	44·11
18	35·00	33·97	47·50	45·17	40·41	6	35·53	37·33	51·13	49·43	43·36
19	35·13	34·87	48·83	46·47	41·32	7	35·50	36·60	50·23	48·63	42·74
20	35·27	36·10	49·90	48·17	42·36	8	35·27	36·03	49·13	47·97	42·10
21	35·70	37·60	50·57	49·57	43·36	9	35·27	35·37	48·27	47·17	41·52
22	36·40	39·03	51·50	50·70	44·41	10	35·10	35·07	47·53	46·60	41·07
23	37·17	39·83	52·43	51·47	45·22	11	35·20	34·93	47·00	46·13	40·82

The ranges of the means for the astronomical quarters and for the year are

Winter, 3°·36 Spring, 7°·00 Summer, 8°·00 Autumn, 7°·50 Year, 6°·36

The ranges of the temperature of evaporation follow nearly the same law as the ranges of the temperature of the air. The ranges for June and July are less than those for April, May, August, and September.

PRESSURE OF AQUEOUS VAPOUR.

TABLE X.—Daily, Weekly, and Monthly Means of the Pressure of Aqueous Vapour, in inches of Mercury, as deduced from Tables I. and VII.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1	0·168	0·150	0·211	0·263	0·252	0·303	0·338	0·370	[0·390]	0·330	0·239	[0·230]
2	·147	·186	·197	·289	·307	[·323]	·321	·349	·387	·316	·218	·226
3	·184	·170	[·183]	·266	·273	·285	·347	·336	·390	·325	[·254]	·221
4	·216	[·162]	·181	·242	·296	·340	·318	[·368]	·424	·282	·238	·183
5	·311	·151	·151	·230	[·291]	·415	·345	·393	·440	·281	·265	·156
6	·277	·139	·159	·223	·326	·433	·356	·384	·472	[·272]	·278	·136
7	[·243]	·177	·165	[·266]	·286	·423	[·352]	·378	·479	·215	·261	·137
8	·224	·183	·198	·303	·258	·382	·334	·358	[·400]	·235	·289	[·165]
9	·194	·203	·257	·355	·280	[·374]	·376	·322	·351	·292	·281	·186
10	·234	·167	[·196]	·242	·303	·325	·382	·308	·314	·336	[·259]	·192
11	·253	[·201]	·222	·216	·336	·321	·346	[·354]	·344	·328	·219	·181
12	·261	·180	·174	·257	[·300]	·363	·323	·380	·295	·335	·227	·164
13	·198	·210	·163	·263	·324	·401	·364	·384	·315	[·318]	·275	·160
14	[·214]	·263	·174	[·255]	·302	·332	[·330]	·373	·387	·321	·242	·197
15	·166	·243	·197	·303	·253	·309	·314	·388	[·337]	·300	·309	[·200]
16	·188	·202	·171	·221	·259	[·346]	·303	·367	·393	·287	·326	·210
17	·220	·233	[·188]	·269	·202	·333	·333	·352	·358	·270	[·304]	·237
18	·230	[·191]	·174	·231	·188	·370	·347	[·356]	·275	·231	·317	·232
19	·198	·192	·221	·306	[·235]	·334	·320	·368	·305	·219	·340	·193
20	·166	·141	·192	·345	·217	·327	·310	·338	·285	[·231]	·290	·147
21	[·204]	·134	·176	[·269]	·271	·413	[·390]	·324	·253	·223	·229	·169
22	·210	·126	·250	·268	·274	·379	·447	·366	[·282]	·235	·189	[·176]
23	·216	·156	·232	·262	·272	[·370]	·430	·369	·269	·207	·227	·180
24	·202	·181	[·243]	·202	·270	·466	·489	·352	·288	·209	[·224]	·184
25	·255	[·162]	·251	·277	·244	·334	·430	[·327]	·290	·284	·185	·182
26	·223	·162	·249	·240	[·262]	·304	·444	·296	·384	·275	·224	·185
27	·284	·151	·298	·209	·257	·289	·471	·271	·416	[·264]	·292	·191
28	[·227]	·195	·224	[·236]	·265	·342	[·409]	·311	·373	·253	·280	·181
29	·237	·199	·291	·242	·262	·336	·343	·345	[·350]	·276	·253	[·194]
30	·200		·253	·197	·298	[·329]	·375	·372	·280	·290	·218	·213
31	·164		[·264]		·296		·394	·420		·284		·210
Mean	0·216	0·180	0·209	0·258	0·273	0·354	0·367	0·355	0·351	0·276	0·258	0·187

Annual Variation of the Pressure of Aqueous Vapour.—This variation follows the same law as that of the temperature of the air. The pressure is a maximum in July and a minimum in February and December. The means for the meteorological seasons are—

		in.			in.
Winter,	Dec., Jan., Feb.,	0·195	Summer,	June, July, Aug.	0·359
Spring,	March, April, May,	0·247	Autumn,	Sept., Oct., Nov.	0·294

The mean pressure of aqueous vapour for the year 1844 = 0·274 in.

TABLE XI.—Pressure of Aqueous Vapour, with reference to the Moon's Age and Declination, for 1844.

Moon's Age.	Mean Pressure of Vapour.	Moon's Age.	Mean Pressure of Vapour.	After Moon farthest North.	Mean Pressure of Vapour.	After Moon farthest North.	Mean Pressure of Vapour.
Day.	in.	Day.	in.	Day.	in.	Day.	in.
15	0·283	0	0·261	0	0·270	14	0·287
16	·286	1	·257	1	·285	15	·289
17	·287	2	·272	2	·291	16	·270
18	·275	3	·268	3	·276	17	·262
19	·292	4	·269	4	·274	18	·275
20	·296	5	·281	5	·259	19	·279
21	·298	6	·283	6	·266	20	·284
22	·295	7	·275	7	·264	21	·287
23	·295	8	·295	8	·270	22	·280
24	·277	9	·285	9	·285	23	·273
25	·265	10	·266	10	·276	24	·284
26	·267	11	·261	11	·281	25	·285
27	·273	12	·258	12	·271	26	·278
28	·278	13	·252	13	·275	27	·273
29	·271	14	·270				

This Table has been formed from Table X., in the manner already described for Table II. of the Magnetical Results.

Pressure of Aqueous Vapour with reference to the Moon's Age.—The following are means of groups:—

	in.		in.
12 days till 18 days, Full Moon,	0·273	27 days till 3 days, New Moon,	0·269
15 ...... 22 ...	0·289	0 ...... 7 ...	0·271
19 ...... 26 ...	0·286	4 ...... 11 ...	0·277
23 ...... 29 ...	0·275	8 ...... 14 ...	0·270

These means, on the whole, give nearly the same result as was obtained from the observations for 1843 (p. 271.) The maximum pressure occurs about four days after full moon, and the minimum occurs after new moon.

Pressure of Aqueous Vapour with reference to the Moon's Declination.—The following are means of groups:—

	in.		in.
25 days till 3 days, Moon farthest North,	0·280	11 days till 17 days, Moon farthest South,	0·276
0 ...... 6 ...	0·274	14 ...... 20 ...	0·278
4 ...... 10 ...	0·271	18 ...... 24 ...	0·280
7 ...... 13 ...	0·275	21 ...... 27 ...	0·280

From these means the pressure of aqueous vapour was a minimum about six days after the moon was farthest north, and a maximum about four days before it was farthest north.

Diurnal Variation of the Pressure of Aqueous Vapour.—The diurnal variation is somewhat irregular in several months of the year, presenting secondary maxima and minima at different hours. The principal maximum pressure occurs as early as $10^{h}\ 30^{m}$ A.M. in September, and as late as $3^{h}\ 10^{m}$ P.M. in August and May. The following are the epochs of maxima and minima for each of the astronomical quarters, as obtained from Table XIII.:—

	Winter.	Spring.	Summer.	Autumn.	Year.
Min.	7^{h} P.M.—6^{h} A.M	$4^{h}\ 10^{m}$ A.M.	$4^{h}\ 10^{m}$ A.M.	$5^{h}\ 10^{m}$ A.M	$4^{h}\ 10^{m}$ A.M.
Max.	$1^{h}\ 10^{m}$ P.M.	$0^{h}\ 10^{m}$ P.M.	0^{h} and 2^{h} P.M.	$11^{h}\ 10^{m}$ A.M. and $3^{h}\ 10^{m}$ P.M.	$1^{h}\ 10^{m}$ P.M.

The pressure is constant in the winter quarter from 7^h P.M. till 6^h A.M.; and in the mean for the year the pressure is nearly constant from 11^h A.M. till 3^h P.M.

The mean tension of aqueous vapour for the year occurs at	$7^h\ 50^m$ A.M.
....	$8^h\ 30^m$ P.M.
The interval between the two epochs of mean tension is	$12^h\ 40^m$

TABLE XII.—Hourly Means of the Pressure of Aqueous Vapour for each Month in 1844, as deduced from Tables II. and VIII.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
12	0·202	0·167	0·197	0·250	0·263	0·335	0·347	0·340	0·332	0·263	0·252	0·185
13	·202	·167	·197	·251	·258	·330	·344	·336	·327	·263	·251	·184
14	·201	·167	·199	·243	·253	·330	·340	·332	·322	·259	·253	·184
15	·204	·169	·196	·238	·249	·330	·338	·328	·319	·259	·252	·182
16	·204	·169	·193	·239	·249	·327	·337	·326	·314	·258	·252	·183
17	·204	·172	·193	·240	·254	·333	·345	·326	·313	·252	·251	·183
18	·206	·170	·191	·245	·262	·344	·359	·336	·318	·255	·253	·183
19	·208	·169	·202	·258	·270	·348	·370	·351	·340	·256	·253	·182
20	·213	·174	·208	·266	·279	·353	·370	·364	·355	·268	·254	·181
21	·217	·181	·210	·271	·279	·355	·372	·368	·365	·278	·259	·181
22	·217	·184	·216	·278	·284	·364	·374	·370	·374	·286	·262	·187
23	·224	·186	·216	·282	·285	·373	·376	·370	·374	·292	·264	·190
0	·227	·187	·220	·280	·284	·383	·382	·366	·365	·291	·261	·194
1	·232	·186	·216	·278	·283	·380	·381	·368	·362	·293	·263	·196
2	·229	·188	·217	·275	·290	·373	·387	·371	·367	·290	·259	·195
3	·226	·186	·216	·268	·291	·373	·384	·378	·369	·287	·258	·191
4	·218	·183	·213	·268	·286	·368	·377	·373	·366	·285	·255	·187
5	·215	·184	·212	·265	·286	·369	·382	·369	·366	·280	·251	·183
6	·210	·179	·208	·256	·283	·368	·372	·375	·361	·276	·252	·182
7	·209	·178	·209	·253	·280	·359	·375	·368	·359	·277	·252	·182
8	·208	·178	·207	·249	·281	·351	·373	·370	·353	·271	·251	·181
9	·209	·173	·203	·249	·276	·347	·365	·354	·348	·268	·250	·181
10	·207	·174	·204	·246	·271	·343	·361	·349	·340	·266	·249	·182
11	·209	·174	·203	·249	·267	·339	·357	·333	·337	·266	·249	·181

TABLE XIII.—Hourly Means of the Pressure of Aqueous Vapour for each Astronomical Quarter, and for the Year 1844.

Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.	Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.
h.	in.	in.	in.	in.	in.	h.	in.	in.	in.	in.	in.
12	0·213	0·205	0·315	0·312	0·261	0	0·227	0·229	0·350	0·341	0·287
13	·212	·205	·311	·309	·259	1	·230	·227	·348	·341	·287
14	·213	·203	·308	·304	·257	2	·228	·227	·350	·343	·287
15	·213	·201	·306	·302	·255	3	·225	·223	·349	·345	·286
16	·213	·200	·304	·299	·254	4	·220	·221	·344	·341	·282
17	·213	·202	·311	·297	·255	5	·216	·220	·346	·338	·280
18	·214	·202	·322	·303	·260	6	·215	·214	·341	·337	·277
19	·214	·210	·329	·316	·267	7	·214	·213	·338	·335	·275
20	·216	·216	·334	·329	·274	8	·213	·211	·335	·331	·273
21	·219	·221	·335	·337	·278	9	·213	·208	·329	·323	·269
22	·222	·226	·341	·343	·283	10	·213	·208	·325	·318	·266
23	·226	·228	·345	·345	·286	11	·213	·209	·321	·312	·264

Diurnal Range of the Hourly Means of the Tension of Aqueous Vapour.—The following are the ranges of the hourly means for each month of 1844 :—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
0·031	0·021	0·029	0·044	0·042	0·056	0·050	0·052	0·061	0·041	0·015	0·015

The diurnal range is greatest in September and least in November and December. The diurnal ranges for each of the astronomical quarters and for the year are—

Winter,	Spring,	Summer,	Autumn,	Year,
in. 0·018	in. 0·029	in. 0·046	in. 0·048	in. 0·033

The Extremes of Daily Mean Pressure and their Ranges for each month are as follow :—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
Greatest,	0·311	0·263	0·298	0·355	0·336	0·466	+0·489	0·420	0·479	0·336	0·340	0·237
Least,	0·147	−0·126	0·151	0·197	0·188	0·285	0·303	0·271	0·253	0·215	0·185	0·136
Range,	0·164	0·137	0·147	0·158	0·148	0·181	0·186	0·149	+0·226	0·121	0·155	−0·101

The maximum and minimum of daily mean pressure for the year are indicated by + and − and the greatest and least monthly ranges of the daily means are similarly marked.

RELATIVE HUMIDITY.

TABLE XIV.—Mean Relative Humidity for each Civil Day, Week, and Month of 1844, Saturation being = 1.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	0·913	0·829	0·858	0·859	0·628	0·863	0·849	0·828	[0·815]	0·803	0·745	[0·910]
2	·919	·969	·845	·873	·706	[·837]	·748	·790	·769	·763	·719	·950
3	·864	·909	[·826]	·861	·700	·723	·828	·870	·899	·758	[·829]	·957
4	·986	[·919]	·830	·917	·916	·811	·855	[·836]	·850	·768	·826	·915
5	·975	·938	·791	·906	[·750]	·904	·833	·814	·891	·889	·914	·969
6	·962	·959	·783	·868	·734	·825	·873	·848	·961	[·801]	·949	·965
7	[·956]	·908	·809	[·857]	·735	·858	[·837]	·865	·894	·782	·946	·913
8	·949	·893	·896	·863	·711	·750	·764	·796	[·861]	·808	·957	[·952]
9	·919	·923	·826	·892	·747	[·781]	·864	·747	·809	·804	·904	·979
10	·944	·831	[·821]	·699	·894	·752	·834	·766	·771	·832	[·913]	·937
11	·948	[·911]	·838	·681	·921	·735	·751	[·811]	·843	·896	·855	·948
12	·932	·928	·806	·851	[·794]	·764	·753	·841	·743	·903	·869	·868
13	·908	·955	·751	·743	·711	·812	·894	·889	.831	[·859]	·948	·874
14	[·947]	·939	·757	[·759]	·782	·760	[·793]	·829	·967	·879	·867	·908
15	·965	·835	·947	·817	·709	·746	·833	·878	[·856]	·840	·842	[·917]
16	·974	·765	·826	·713	·710	[·843]	·716	·844	·822	·806	·860	·925
17	·957	·857	[·841]	·751	·716	·876	·814	·871	·955	·780	[·863]	·979
18	·821	[·822]	·883	·681	·715	·951	·798	[·831]	·816	·773	·843	·951
19	·756	·850	·840	·793	[·738]	·915	·773	·870	·854	·890	·916	·960
20	·769	·783	·793	·839	·664	·824	·733	·741	·833	[·863]	·848	·993
21	[·851]	·843	·769	[·744]	·786	·860	[·781]	·783	·866	·910	·920	·960
22	·875	·863	·877	·795	·838	·764	·779	·920	[·847]	·914	·955	[·931]
23	·952	·876	·859	·749	·832	[·852]	·725	·848	·891	·912	·876	·822
24	·931	·943	[·831]	·607	·763	·934	·881	·850	·796	·925	·914]	·915
25	·892	[·882]	·878	·767	·685	·877	·725	[·809]	·843	·925	·974	·938
26	·814	·900	·781	·700	[·784]	·852	·831	·724	·842	·833	·929	·925
27	·828	·839	·823	·649	·784	·745	·804	·749	·870	[·894]	·832	·985
28	[·838]	·874	·778	[·671]	·839	·769	[·822]	·762	·876	·941	·856	·995
29	·832	·850	·848	·676	·799	·796	·739	·793	[·827]	·899	·891	[·968]
30	·797		·838	·604	·861	[·789]	·937	·783	·809	·843	·893	·955
31	868		[·843]		·860		·895	·795		·821		·968
Mean	0·935	0·882	0.828	0·775	0·768	0·819	0·808	0·818	0·852	0·848	0·882	0·941

Annual Variation of the Relative Humidity.—The relative humidity is a minimum in April and May, and a maximum in December and January. The following are the means for the meteorological seasons:—

Winter,	Dec., Jan., Feb.,	0·919	Summer,	June, July, Aug.,	0·815
Spring,	March, April, May,	0·790	Autumn,	Sept., Oct., Nov.,	0·861

The mean relative humidity for 1844 = 0·846.

TABLE XV.—Mean Relative Humidity, Saturation being = 1, with reference to the Moon's Age and Declination.

Moon's Age.	Mean Relative Humidity.	Moon's Age.	Mean Relative Humidity.	After Moon farthest North.	Mean Relative Humidity.	After Moon farthest North.	Mean Relative Humidity.
Day.		Day.		Day.		Day.	
15	0·869	0	0·830	0	0·810	14	0·861
16	·851	1	·821	1	·834	15	·825
17	·857	2	·851	2	·827	16	·802
18	·851	3	·844	3	·846	17	·805
19	·856	4	·838	4	·847	18	·846
20	·845	5	·856	5	·827	19	·847
21	·836	6	·825	6	·840	20	·859
22	·829	7	·814	7	·834	21	·844
23	·866	8	·840	8	·842	22	·836
24	·834	9	·849	9	·867	23	·834
25	·839	10	·826	10	·863	24	·824
26	·843	11	·842	11	·839	25	·855
27	·844	12	·830	12	·860	26	·844
28	·839	13	·827	13	·869	27	·827
29	·828	14	·828				

Humidity with reference to the Moon's Age.—The following means of groups indicate that the humidity was greatest a few days after full moon, and least between new moon and full moon:—

12 days till	18 days,	Full Moon,	0·845		27 days till	3 days,	New Moon,	0·837
15	22	...	0·849		0	7	...	0·835
19	26	...	0·844		4	11	...	0·836
23	29	...	0·842		8	14	...	0·835

The results for 1843 and 1844 agree in making the humidity greatest about the third, and least about the first quarter.

Humidity with reference to the Moon's Declination.—The means of groups are—

25 days till	3 days,	Moon farthest North,	0·835		11 days till	17 days,	Moon farthest South,	0·837
0	6	...	0·833		14	20	...	0·835
4	10	...	0·846		18	24	...	0·841
7	13	...	0·853		21	27	...	0·838

These means indicate a maximum before the moon is farthest south, and a minimum after it is farthest south. The result does not agree with that for 1843.

TABLE XVI.—Hourly Means of the Relative Humidity for each Month in 1843, Saturation being = 1.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h. 12	0·898	0·903	0·879	0·883	0·907	0·910	0·916	0·912	0·935	0·901	0·894	0·949
13	·898	·898	·883	·900	·893	·909	·937	·921	·934	·901	·884	·948
14	·897	·913	·888	·893	·900	·922	·937	·920	·933	·906	·897	·948
15	·915	·918	·887	·885	·899	·930	·944	·927	·941	·906	·894	·948
16	·915	·918	·885	·898	·899	·903	·936	·934	·937	·905	·900	·953
17	·932	·920	·894	·899	·885	·893	·918	·929	·932	·894	·893	·953
18	·924	·914	·893	·872	·845	·869	·886	·901	·927	·898	·900	·958
19	·916	·909	·906	·860	·806	·827	·845	·877	·916	·892	·900	·948
20	·926	·921	·878	·813	·784	·795	·784	·843	·872	·873	·901	·948
21	·927	·900	·826	·753	·736	·775	·758	·788	·830	·845	·887	·948
22	·893	·852	·800	·706	·714	·746	·732	·746	·801	·812	·873	·949
23	·882	·823	·766	·684	·674	·717	·701	·712	·766	·783	·860	·931
0	·857	·810	·753	·662	·643	·735	·703	·679	·729	·750	·834	·924
1	·859	·782	·725	·653	·622	·714	·700	·676	·713	·746	·827	·907
2	·851	·790	·721	·641	·633	·717	·706	·683	·725	·736	·820	·915
3	·863	·816	·720	·634	·638	·740	·693	·699	·741	·753	·843	·927
4	·872	·836	·737	·663	·647	·742	·702	·701	·766	·785	·859	·944
5	·885	·893	·777	·692	·678	·769	·730	·741	·815	·828	·872	·929
6	·894	·891	·812	·709	·713	·803	·743	·794	·847	·844	·878	·938
7	·889	·899	·846	·762	·761	·820	·789	·842	·880	·871	·878	·938
8	·893	·913	·862	·781	·822	·846	·818	·892	·907	·869	·890	·943
9	·897	·896	·868	·825	·852	·872	·867	·894	·916	·884	·893	·938
10	·896	·916	·883	·842	·869	·889	·898	·914	·924	·884	·892	·948
11	·901	·911	·883	·877	·884	·899	·902	·893	·931	·884	·886	·943

TABLE XVII.—Hourly Means of the Relative Humidity for each Astronomical Quarter, and for the Year 1844.

Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.	Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.
h. 12	0·914	0·888	0·911	0·916	0·907	h. 0	0·872	0·742	0·694	0·719	0·757
13	·910	·894	·913	·919	·909	1	·864	·720	·679	·712	·744
14	·914	·898	·920	·920	·913	2	·862	·717	·685	·715	·745
15	·919	·897	·928	·925	·916	3	·878	·723	·690	·731	·756
16	·923	·900	·913	·925	·915	4	·892	·745	·697	·751	·771
17	·926	·904	·899	·918	·912	5	·895	·787	·726	·795	·801
18	·927	·893	·867	·909	·899	6	·903	·804	·753	·828	·822
19	·921	·892	·826	·895	·883	7	·902	·836	·790	·864	·848
20	·925	·871	·788	·863	·861	8	·909	·852	·839	·889	·872
21	·921	·826	·756	·821	·831	9	·909	·863	·864	·898	·883
22	·905	·786	·731	·786	·802	10	·912	·880	·885	·907	·896
23	·891	·758	·697	·754	·775	11	·910	·890	·895	·903	·899

Diurnal Variation of the Relative Humidity.—The relative humidity is a minimum from noon to 3 P.M. in the different months of the year, occurring as early as $0^h\ 40^m$ P.M. in August, and as late as $3^h\ 10^m$ P.M. in November and April: it is a maximum in general about sunrise, though it varies little from sunset to sunrise in the winter months. The following are the epochs of maxima and minima for each of the astronomical quarters and for the year 1844:—

	Winter.	Spring.	Summer.	Autumn.	Year.
Max.	$5^h\ 40^m$ A.M.	$5^h\ 10^m$ A.M.	$3^h\ 10^m$ A.M.	$3^h\ 40^m$ A.M.	$3^h\ 30^m$ A.M.
Min.	$1^h\ 45^m$ P.M.	$2^h\ 0^m$ P.M.	$1^h\ 10^m$ P.M.	$1^h\ 30^m$ P.M.	$1^h\ 35^m$ P.M.

The mean value of the relative humidity occurs at $8^h\ 40^m$ A.M.
.... $7^h\ 12^m$ P.M.

The interval between the periods of mean humidity = $10^h\ 32^m$

Diurnal Ranges of the Hourly Variations of Humidity for each Month.—The ranges for each month from Table XVI. are—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·081	0·138	0·186	0·266	0·285	0·216	0·251	0·258	0·228	0·170	0·080	0·051

The diurnal range is least in December and is greatest in April and August. The mean range of the diurnal variation of humidity is less for the midsummer months, June and July, than for the two preceding or two succeeding months.

The Extremes of Daily Mean Humidity and their Ranges are as follow for each month of 1844 :—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Greatest	0·986	0·969	0·947	0·917	0·921	0·951	0·937	0·920	0·967	0·941	0·974	0·995
Least,	0·756	0·765	0·751	0·604	0·628	0·723	0·716	0·724	0·743	0·758	0·719	0·822
Ranges,	0·230	0·204	0·196	0·313	0·293	0·228	0·221	0·196	0·224	0·183	0·255	0·173

The greatest daily mean of relative humidity occurred on the 19th December when the air was nearly saturated, and the least occurred on the 30th April when the air contained only $\frac{6}{10}$ of its capacity. The greatest range of diurnal means for a month, is that for April, and the least is that for December.

ATMOSPHERIC PRESSURE.

TABLE XVIII.—Daily, Weekly, and Monthly Means of the Height of the Barometer in 1844.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
1	29·224	29·725	28·828	29·936	30·208	29·886	29·645	29·302	[30·011]	29·592	29·508	[29·941]
2	29·433	29·429	28·818	29·638	30·226	[29·812]	29·670	29·502	30·098	29·169	29·433	29·890
3	29·432	29·804	[29·220]	29·445	30·094	29·856	29·640	29·314	30·070	29·266	[29·405]	30·047
4	29·389	[29·377]	29·266	29·427	30·146	29·750	29·556	[29·292]	30·040	29·553	29·342	30·142
5	29·038	29·235	29·542	29·472	[29·924]	29·531	29·490	29·539	29·898	29·426	29·270	30·015
6	28·851	29·238	29·688	29·818	29·678	29·367	29·617	29·102	29·716	[29·388]	29·224	30·019
7	[29·492]	28·833	29·983	[29·828]	29·647	29·352	[29·593]	28·992	29·595	29·647	29·234	30·112
8	29·774	28·761	29·798	30·077	29·751	29·600	29·652	29·100	[29·663]	29·486	29·049	[30·016]
9	29·982	28·918	29·393	30·170	29·733	[29·586]	29·654	29·350	29·520	28·948	28·739	30·060
10	29·921	29·424	[29·503]	30·003	29·718	29·640	29·589	29·418	29·564	28·853	[29·032]	30·074
11	30·084	[29·371]	28·993	29·600	29·879	29·838	29·477	[29·277]	29·685	29·254	28·878	29·814
12	29·852	29·731	29·175	29·478	[29·971]	29·720	29·558	29·362	29·744	29·309	29·066	29·763
13	29·940	29·769	29·675	29·357	30·117	29·399	29·347	29·308	29·862	[28·937]	29·228	29·472
14	[30·018]	29·625	29·566	[29·637]	30·168	29·493	[29·546]	29·125	29·731	28·824	29·769	29·434
15	30·168	29·537	29·325	29·653	30·210	29·639	29·524	29·425	[29·704]	28·619	29·533	[29·472]
16	30·067	29·740	29·688	29·874	29·904	[29·610]	29·687	29·564	29·437	28·763	29·830	29·338
17	30·000	29·671	[29·629]	29·860	29·842	29·841	29·683	29·423	29·859	29·035	[29·754]	29·261
18	29·830	[29·461]	29·982	29·910	29·924	29·595	29·481	[29·523]	29·589	29·410	29·819	29·567
19	29·625	29·088	29·739	30·015	[29·976]	29·696	29·571	29·792	29·928	29·241	29·796	30·081
20	29·777	29·483	29·476	29·966	29·985	29·627	29·886	29·501	30·013	[29·387]	29·777	30·286
21	[29·786]	29·245	29·675	[29·876]	30·049	29·500	[29·717]	29·432	30·078	29·377	30·079	30·314
22	29·713	29·332	29·279	29·869	30·154	29·447	29·861	29·390	[29·943]	29·630	30·018	[30·166]
23	29·858	29·197	29·328	29·759	30·101	[29·536]	29·759	29·386	29·810	29·631	29·875	30·118
24	29·913	29·028	[29·378]	29·736	29·981	29·499	29·745	29·539	29·876	29·655	[29·927]	30·128
25	29·831	[29·097]	29·079	29·859	30·015	29·542	29·750	[29·633]	29·955	29·770	29·831	30·068
26	29·979	28·764	29·355	29·783	[30·030]	29·604	29·800	29·750	29·906	29·943	29·925	29·906
27	29·859	29·109	29·554	29·997	30·147	29·665	29·948	29·833	29·816	[29·838]	29·835	29·830
28	[29·641]	29·152	30·081	[30·011]	30·018	29·746	[29·631]	29·903	29·701	30·070	29·685	29·706
29	29·410	29·177	30·243	30·078	29·920	29·835	29·691	29·901	[29·685]	29·910	29·861	[29·868]
30	29·290		30·216	30·140	29·911	[29·700]	29·320	29·912	29·926	29·682	30·021	29·817
31	29·475		[29·926]		29·938		29·275	30·046		29·652		29·918
Mean	29·693	29·321	29·529	29·805	29·980	29·627	29·625	29·489	29·817	29·397	29·563	29·892

Annual Variation of Atmospheric Pressure.—In 1844, the monthly mean of the height of the barometer was lowest in February, being 29·321 in.; and it was highest in May, being 29·980 in.: the range of the monthly means, therefore, was 0·659 in. The following are the mean pressures, in inches, of mercury at 32° for each of the meteorological quarters of 1844:—

		in.			in.
Winter,......	Dec., Jan., Feb.,	29·635	Summer,......	June, July, Aug.,	29·580
Spring,......	March, April, May,	29·771	Autumn,......	Sept., Oct., Nov.,	29·592

The mean pressure for the year 1844, = 29·645 in.

The pressure of the atmosphere was least in summer, and greatest in spring. The three consecutive months with the lowest mean pressure, are January, February, and March, the mean being 29·514 in.; and the three with the highest mean pressure are April, May, and June, the mean being = 29·804 in.

TABLE XIX.—Diurnal Range of the Barometer for each Civil Day, with the Weekly and Monthly Means, for 1844.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	in.	in.	in.	in	in.	in.	in.	in.	in.	in.	in.	in.
1	0·111	0·320	0·200	0·098	0·070	0·082	0·042	0·163	[0·074]	0·209	0·134	[0·163]
2	·392	·449	·106	·407	·130	[·107]	·031	·107	·064	·382	·124	·158
3	·226	·199	[·272]	·070	·130	·063	·062	·296	·037	·255	[·160]	·262
4	·211	[·257]	·460	·077	·081	·141	·090	[·256]	·070	·187	·315	·118
5	·461	·063	·052	·228	[·144]	·254	·044	·095	·179	·182	·128	·059
6	·268	·161	·361	·260	·258	·098	·209	·653	·168	[·297]	·156	·068
7	[·330]	·349	·139	[·202]	·183	·159	[·133]	·224	·058	·220	·090	·088
8	·535	·053	·498	·169	·081	·327	·111	·210	[·143]	·501	·421	[·120]
9	·259	·555	·420	·055	·083	[·187]	·099	·165	·112	·438	·106	·138
10	·246	·308	[·363]	·421	·138	·161	·244	·113	·262	·390	[·217]	·168
11	·113	[·216]	·355	·160	·117	·099	·061	[·172]	·080	·286	·178	·199
12	·206	·098	·659	·345	[·117]	·276	·127	·139	·214	·269	·156	·160
13	·219	·072	·110	·074	·077	·166	·654	·228	·058	[·235]	·350	·226
14	[·137]	·213	·269	[·179]	·164	·184	[·218]	·180	·185	·181	·463	·069
15	·106	·296	·172	·176	·126	·271	·161	·331	[·169]	·054	·417	[·197]
16	·099	·048	·466	·149	·371	[·182]	·127	·240	·141	·230	·270	·100
17	·082	·140	[·341]	·170	·137	·242	·181	·358	·227	·345	[·303]	·100
18	·333	[·223]	·119	·252	·200	·122	·121	[·243]	·191	·256	·131	·525
19	·189	·478	·518	·059	[·173]	·108	·247	·312	·043	·395	·147	·366
20	·133	·174	·505	·061	·091	·195	·242	·143	·100	[·255]	·393	·082
21	[·153]	·203	·293	[·214]	·201	·103	[·150]	·072	·045	·433	·112	·041
22	·125	·199	·269	·105	·040	·136	·068	·089	[·084]	·065	·173	[·109]
23	·105	·738	·134	·396	·090	[·125]	·125	·131	·150	·037	·077	·036
24	·036	·706	[·321]	·409	·101	·096	·098	·142	·134	·116	[·111]	·032
25	·297	[·403]	·324	·123	·134	·104	·078	[·097]	·031	·097	·125	·097
26	·082	·546	·416	·198	[·096]	·118	·191	·077	·071	·241	·056	·166
27	·263	·119	·489	·171	·041	·047	·059	·085	·111	[·151]	·125	·043
28	[·266]	·112	·267	[·124]	·176	·115	[·179]	·060	·193	·107	·121	·181
29	·438	·455	·061	·075	·034	·045	·043	·076	[·231]	·236	·242	[·122]
30	·195		·093	·106	·055	[·057]	·540	·097	·419	·112	·075	·143
31	·323		[·166]		·050		·164	·102		·103		·146
Mean	0·224	0·282	0·298	0·185	0·124	0·148	0·156	0·181	0·134	0·234	0·196	0·145

Annual Variation of the Mean Diurnal Ranges of Atmospheric Pressure.—The mean of the diurnal ranges is greatest for the month of March, being 0·298 in.; and it is least for the month of May, being 0·124 in. The annual variation of the diurnal ranges, is exactly the reverse of the annual variation of the pressures; when

the mean pressure increases, the range diminishes, and *vice versa*. The means for the meteorological quarters are as follow:—

		in.			in.
Winter,......	Dec., Jan., Feb.,	0·217	Summer,......	June, July, Aug.,	0·162
Spring,......	March, April, May,	0·202	Autumn,......	Sept., Oct., Nov.,	0·188

The mean of the ranges for the year 1844, = 0·192 in.

The range was greatest in winter, and least in summer. The three consecutive months with the greatest mean of ranges are January, February, and March, the mean being 0·268 in.; and the three with the least mean of ranges are May, June, and July, the mean being 0·143 in.

TABLE XX.—Diurnal Range of the Barometer, with reference to the Moon's Age and Declination, for 1844.

Moon's Age.	Mean Diurnal Range.	Moon's Age.	Mean Diurnal Range.	After Moon farthest North.	Mean Diurnal Range.	After Moon farthest North.	Mean Diurnal Range.
Day.	in.	Day.	in.	Day.	in.	Day.	in.
15	0·219	0	0·185	0	0·196	14	0·184
16	·147	1	·246	1	·220	15	·184
17	·142	2	·198	2	·266	16	·207
18	·182	3	·185	3	·211	17	·152
19	·260	4	·213	4	·155	18	·211
20	·190	5	·221	5	·229	19	·175
21	·202	6	·270	6	·206	20	·150
22	·221	7	·190	7	·190	21	·171
23	·243	8	·210	8	·210	22	·214
24	·176	9	·206	9	·168	23	·175
25	·151	10	·220	10	·196	24	·216
26	·166	11	·146	11	·180	25	·258
27	·256	12	·113	12	·158	26	·188
28	·194	13	·116	13	·134	27	·221
29	·219	14	·118				

Table XX. has been formed from Table XIX. in the manner already described for Table II. of the magnetical results.

Variation of the Diurnal Range of Atmospheric Pressure with the Moon's Age.—The following are means of groups from the first portion of Table XX.:—

	in.		in.
12 days till 18 days, Full Moon, ...	0·148	27 days till 3 days, New Moon, ...	0·212
15 .... 22 ...	0·195	0 .... 7 ...	0·213
19 .... 26 ...	0·201	4 .... 11 ...	0·209
23 .... 29 ...	0·201	8 .... 14 ...	0·161

The diurnal range of atmospheric pressure is least at full moon, and is greatest about new moon. The difference is well marked.

Variation of the Diurnal Range of Atmospheric Pressure with reference to the Moon's Declination.—The means of groups from the second portion of Table XX. are as follow:—

	in.		in.
25 days till 3 days, Moon farthest North,...	0·223	11 days till 17 days, Moon farthest South,...	0·171
0 .... 6 ...	0·212	14 .... 20 ...	0·180
4 .... 10 ...	0·193	18 .... 24 ...	0·187
7 .... 13 ...	0·177	21 .... 27 ...	0·206

These means vary with great regularity. The diurnal range of atmospheric pressure was greatest when the moon was farthest north, and it was least when the moon was farthest south. The mean of 84 diurnal ranges about the time of the moon's greatest northerly position was 0·052 in. greater than the mean of the same number of ranges about the time of the moon's greatest southerly position.

TABLE XXI.—Hourly Means of the Height of the Barometer for each Month, and the Year 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
12	29·695	29·307	29·511	29·811	29·988	29·631	29·641	29·493	29·828	29·397	29·553	29·892	29·6456
13	·691	·300	·511	·805	·982	·629	·638	·489	·825	·392	·549	·887	·6415
14	·690	·295	·506	·802	·981	·623	·633	·483	·819	·385	·548	·888	·6377
15	·690	·290	·504	·800	·978	·621	·629	·478	·814	·378	·544	·885	·6342
16	·686	·287	·506	·796	·981	·624	·632	·475	·811	·375	·545	·879	·6331
17	·684	·289	·507	·802	·987	·628	·635	·479	·812	·374	·544	·876	·6347
18	·684	·290	·511	·807	·991	·631	·638	·485	·820	·376	·544	·878	·6379
19	·687	·299	·513	·811	·995	·632	·638	·488	·825	·387	·550	·883	·6423
20	·695	·312	·517	·812	·997	·635	·637	·489	·827	·395	·559	·891	·6472
21	·701	·318	·523	·811	·996	·635	·635	490	·830	·400	·565	·899	·6502
22	·706	·325	·526	·809	·993	·634	·629	·489	·826	·401	·572	·904	·6512
23	·698	·331	·529	·805	·988	·629	·630	·490	·821	·401	·572	·899	·6497
0	·692	·336	·528	·802	·982	·630	·629	·487	·817	·397	·567	·889	·6463
1	·686	·336	·526	·801	·977	·627	·629	·486	·813	·396	·564	·884	·6437
2	·685	·333	·527	·795	·970	·625	·621	·486	·806	·397	·562	·884	·6409
3	·689	·333	·528	·793	·962	·624	·616	·485	·803	·394	·564	·887	·6398
4	·692	·334	·533	·794	·959	·621	·609	·485	·801	·399	·565	·888	·6400
5	·691	·337	·542	·794	·959	·617	·603	·484	·803	·404	·569	·890	·6413
6	·697	·340	·549	·799	·962	·620	·603	·489	·808	·412	·573	·893	·6454
7	·700	·344	·557	·806	·970	·622	·607	·494	·815	·414	·575	·899	·6502
8	·698	·343	·556	·812	·978	·625	·611	·500	·819	·418	·577	·903	·6533
9	·700	·340	·558	·814	·983	·627	·616	·504	·818	·416	·579	·905	·6550
10	·700	·337	·559	·814	·983	·625	·621	·507	·821	·412	·580	·907	·6555
11	·694	·336	·561	·814	·983	·626	·622	·507	·819	·406	·582	·907	·6547

Diurnal Variation of Atmospheric Pressure.—The means for each month indicate two maxima and two minima; the epochs, however, vary considerably; this is chiefly due to rapid variations of mean pressure, and especially to those which occur between Saturday night and Monday morning; these render the mean at 11^h (the hour of the last observation on Saturday) considerably different from that at 12^h (the hour of the first observation on Monday morning). Assuming that the change in the means from 11^h to 12^h is the same as from 10^h to 11^h, the differences between the means for 12^h so obtained, and the means for 12^h at the commencement of each series, will be due to the causes noticed above, and they may be considered as differences which have gradually increased from the first to the following 12^h. By correcting the observations for such gradual changes, the epochs of maxima and minima will be determined with more accuracy. Table XXII. has been formed in this way. The hourly means of the astronomical quarters having been obtained, the change from the preceding to the following 12^h was found—

For Winter, $=+0·0131$ in.	Correction, $=-0·00055$ in. an hour.	For Summer, $=-0·0090$ in.	Correction, $=+0·00037$ in. an hour.
For Spring, $=+0·0270$.	.... $=-0·00112$	For Autumn, $=$ 0·0000.	

For the means for the year, $=+0·0083$ in. Correction, $=-0·00035$ in. an hour.

The number of the hour after 12^h being n, the hourly means for the quarters were corrected by the quantities $n \times c$, where c is the correction given above for the respective quarters; the numbers for each quarter and the year, in excess of the lowest mean thus corrected, are given in Table XXII.

TABLE XXII.—Hourly Variations of the Height of the Barometer for each Astronomical Quarter, and for the year 1844.

Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.	Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.
h.	in.	in.	in.	in.	in.	h.	in.	in.	in.	in.	in.
12	0·0147	0·0178	0·0207	0·0190	0·0139	0	0·0108	0·0166	0·0188	0·0133	0·0104
13	·0099	·0124	·0175	·0150	·0094	1	·0056	·0145	·0165	·0113	·0074
14	·0090	·0068	·0138	·0086	·0053	2	·0040	·0108	·0113	·0093	·0043
15	·0061	·0027	·0112	·0030	·0014	3	·0065	·0093	·0069	·0070	·0028
16	·0025	·0000	·0146	·0000	·0000	4	·0076	·0106	·0030	·0080	·0027
17	·0000	·0019	·0192	·0013	·0012	5	·0098	·0134	·0000	·0100	·0036
18	·0001	·0041	·0229	·0066	·0041	6	·0125	·0173	·0024	·0160	·0074
19	·0043	·0079	·0250	·0130	·0081	7	·0157	·0225	·0074	·0206	·0118
20	·0120	·0128	·0267	·0166	·0127	8	·0164	·0227	·0128	·0253	·0146
21	·0182	·0154	·0260	·0196	·0153	9	·0179	·0220	·0172	·0256	·0159
22	·0232	·0169	·0231	·0183	·0160	10	·0183	·0201	·0185	·0263	·0160
23	·0184	·0185	·0205	·0170	·0141	11	·0165	·0193	·0196	·0236	·0149

The epochs of maxima and minima, distinguishing the principal by + and −, for the astronomical quarters, and for the year, are as follow :—

		Min.	Max.	Min.	Max.
Winter.	Nov., Dec., Jan.,......	$-5^h\ 40^m$ A.M.	$+10^h\ 10^m$ A.M.	$2^h\ 0^m$ P.M.	$9^h\ 50^m$ P.M.
Spring.	Feb., March, April,...	−4 10 A.M.	11 10 A.M.	3 10 P.M.	+ 7 40 P.M.
Summer.	May, June, July,......	3 10 A.M.	+ 8 20 A.M.	−5 20 P.M.	12 0 P.M.
Autumn.	Aug., Sept., Oct., ...	−4 20 A.M.	9 30 A.M.	3 30 P.M.	+10 0 P.M.
Year		−4 10 A.M.	+10 0 A.M.	3 40 P.M.	+ 9 40 P.M.

The morning minimum occurs earliest in summer, and latest in winter.
The morning maximum occurs earliest in summer, and latest in spring and winter.
The afternoon minimum occurs latest in summer, and earliest in winter.
The evening maximum occurs latest in summer, and earliest in spring.
The differences in the epochs appear to be related to the varying times of sunrise and sunset.
The true times of mean pressure for the year from Table XXI. are, $12^h\ 0^m$, $7^h\ 40^m$ A.M., $0^h\ 40^m$ P.M., $6^h\ 10^m$ P.M.
The times from Table XXII. are, ... $1^h\ 17^m$ A.M., $7^h\ 20^m$ A.M., $0^h\ 40^m$ P.M., $6^h\ 30^m$ P.M.
The intervals between the times of mean pressure for the last case are, $6^h\ 3^m$, $5^h\ 20^m$, $5^h\ 50^m$.

Range of the Mean Diurnal Variation.—The ranges of the mean diurnal variation from Table XXI. are

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
0·022	0·057	0·057	0·021	0·038	0·018	0·038	0·032	0·029	0·044	0·038	0·031

The range of the mean variations was greatest in February, March, and October, and least in June and January. The ranges of the means for the astronomical quarters, and the year, were

Winter, 0·028 in. Spring, 0·041 in. Summer, 0·030 in. Autumn, 0·026 in. The Year, 0·022 in.

These ranges, however, are affected by the changes of mean pressure from day to day; the following ranges of the mean variations from Table XXII. are probably much nearer the truth :—

Winter, 0·023 in. Spring, 0·023 in. Summer, 0·027 in. Autumn, 0·026 in. The Year, 0·016 in.

TABLE XXIII.—Extreme Readings of the Barometer for each Month; Extreme Mean Daily Heights for each Month; and Extreme Diurnal Ranges for each Month, together with the Ranges and Means of the Extremes.

Month.	Extreme Readings.								Extreme Daily Means.						Extreme Diurnal Ranges.			
	Highest.			Lowest.			Range.	Mean.	Highest.		Lowest.		Range.	Mean.	Greatest.		Least.	
	d.	h.	in.	d.	h.	in.	in.	in.	d.	in.	d.	in.	in.	in.	d.	in.	d.	in.
Jan.	14	13	30·234	5	19, 20	28·754	1·480	29·494	15	30·168	6	28·851	1·317	29·509	8	0·535	24	0·036
Feb.	3	0	29·869	25	18	28·559	1·310	29·214	3	29·804	8	28·761	1·043	29·282	23	0·738	16	0·048
March	28	23	30·267	0	15	28·716	1·551	29·491	29	30·243	2	28·818	1·425	29·530	12	0·659	5	0·052
April	30	12	30·195	12	11	29·298	0·897	29·746	9	30·170	13	29·357	0·813	29·763	10	0·421	9	0·055
May	1	20, 21	30·281	6	15	29·569	0·712	29·925	2	30·226	7	29·647	0·579	29·936	16	0·371	29	0·034
June	16	13	29·950	7	9, 10	29·263	0·687	29·606	1	29·886	7	29·352	0·534	29·619	8	0·327	29	0·045
July	20	12	29·982	13	12	28·959	1·023	29·470	27	29·948	31	29·275	0·673	29·611	13	0·654	2	0·031
Aug.	31	12	30·089	6	9	28·811	1·278	29·450	31	30·046	7	28·992	1·054	29·519	6	0·653	28	0·060
Sept.	1	16	30·125	15	15	29·373	0·752	29·749	2	30·098	16	29·437	0·661	29·767	30	0·419	25	0·031
Oct.	27	13	30·127	14	18, 19	28·596	1·531	29·361	28	30·070	15	28·619	1·451	29·344	8	0·501	23	0·037
Nov.	21	0	30 112	9	2	28·697	1·415	29·404	21	30·079	9	28·739	1·340	29·409	14	0·463	26	0·056
Dec.	21	8	30·333	17	2	29·230	1·103	29·781	21	30·314	17	29·261	1·053	29·787	18	0·525	24	0·032

Extremes of Atmospheric Pressure for 1844.

		in.	in.	in.
The highest barometer occurred..................	Dec. 21^d 8^h	$=30·333$	Range$=6·774$.	Mean$=29·446$.
The lowest	Feb. 25^d 18^h	$=28·559$		
The highest daily mean pressure occurred......	Dec. 21^d	$=30·314$	Range$=1·695$.	Mean$=29·466$.
The lowest	Oct. 15^d	$=28·619$		
The highest monthly mean pressure occurred in	May	$=29·980$	Range$=0·659$.	Mean$=29·650$.
The lowest..	Feb.	$=29·321$		

The greatest range of pressure in a civil day occurred February 23^d $=0·738$.
The least .... July 2^d and September $25^d=0·031$.

PRESSURE OF DRY AIR.

Annual Variation of the Pressure of Dry Air.—If we assume that the means at the foot of Table X. accurately represent the pressures of the vapour of water in the atmosphere, the mean pressures of the dry air will be obtained by subtracting them from the means for the total atmospheric pressure, Table XVIII. The resulting mean pressures of dry air are as follow:—

in.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
29	·477	·141	·320	·547	·707	·273	·258	·134	.466	·121	.305	·705

The least mean pressures of dry air are those for October, August, and February, and the greatest are those for May and December. The means vary in the same manner as those for the total atmospheric pressure.

Diurnal Variation of the Pressure of Dry Air.—The following Table contains the diurnal variations of the pressure of dry air, obtained from a comparison of Tables XIII. and XXII.

The variation of the pressure of the dry air thus determined is double in winter, like that of the total pressure; there is a secondary maximum and minimum in autumn, and the variation is single, with some irregularities, in the other quarters, and for the year. The epochs of maxima and minima are as follow:—

		Max.	Min.	Max.	Min.
Winter.	Nov., Dec., Jan.,......	$+$ 9^h 40^m P.M.	6^h 50^m A.M.	10^h 0^m A.M.	-1^h 40^m P.M.
Spring.	Feb., March, April,...	9^h 10^m P.M.			2^h 10^m P.M.
Summer.	May, June, July,......			4^h 10^m A.M.	5^h 10^m P.M.
Autumn.	Aug., Sept., Oct., ...	$+11^h$ 10^m P.M.	3^h 40^m A.M.	5^h 40^m A.M.	-3^h 10^m P.M.
The year 1844,.....................		12^h 10^m A.M.			2^h 40^m P.M.

The law of variation is so different in the different quarters of the year, that no confidence should be placed in these results, as exhibiting the diurnal variation of the pressure of dry air: it appears extremely probable that the true pressure of aqueous vapour in the atmosphere is not to be determined by means of the psychrometer.

TABLE XXIV.—Hourly Variations of the Pressure of Dry Air for each Astronomical Quarter, and for the year 1844.

Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.	Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.
h.	in.	in.	in.	in.	in.	h.	in.	in.	in.	in.	in.
12	0·026	0·029	0·052	0·045	0·036	0	0·008	0·004	0·015	0·010	0·006
13	·022	·023	·052	·044	·033	1	·000	·003	·014	·008	·003
14	·020	·020	·052	·043	·031	2	·000	·000	·007	·004	·000
15	·017	·018	·051	·039	·029	3	·005	·002	·004	·000	·000
16	·013	·016	·057	·039	·029	4	·012	·006	·005	·005	·004
17	·011	·016	·054	·042	·029	5	·008	·009	·000	·010	·007
18	·010	·018	·047	·042	·027	6	·021	·019	·007	·017	·013
19	·014	·014	·042	·035	·024	7	·026	·025	·015	·024	·020
20	·020	·013	·039	·026	·022	8	·027	·028	·024	·032	·025
21	·023	·010	·037	·021	·020	9	·029	·030	·034	·041	·030
22	·025	·007	·028	·013	·016	10	·029	·028	·039	·046	·033
23	·016	·006	·021	·010	·011	11	·027	·026	·040	·050	·034

PRESSURE OF THE WIND.

TABLE XXV.—Daily, Weekly, and Monthly Means of the Pressure of Wind, in Pounds on the Square Foot of Surface, deduced from the greatest pressures occurring *between* the Hourly Observations, in 1844.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1	0·05	0·10	1·22	0·37	0·10	0·08	0·21	0·66	[0·27]	1·48	2·44	[0·32]
2	0·15	0·07	1·56	1·58	0·00	[0·31]	0·04	0·50	0·15	3·41	3·35	0·02
3	0·86	0·13	[0·81]	0·27	0·15	0·02	0·09	0·57	0·37	2·66	[1·97]	0·03
4	0·02	[0·17]	1·14	0·00	0·20	0·79	0·14	[0·98]	0·61	0·84	1·22	0·20
5	0·35	0·00	0·20	0·15	[0·12]	0·65	0·01	0·12	0·67	0·20	1·17	0·13
6	0·00	0·00	0·64	0·11	0·32	0·49	0·10	1·96	0·27	[1·28]	2·10	0·05
7	[0·23]	0·73	0·05	[0·30]	0·01	1·04	[0·23]	2·09	0·21	0·38	0·13	0·78
8	0·00	1·42	0·89	0·64	0·07	1·16	0·22	1·54	[0·38]	0·79	0·50	[0·19]
9	1·04	1·43	3·42	0·40	0·07	[0·94]	0·15	1·08	0·37	2·84	0·23	0·12
10	0·00	1·05	[1·32]	0·51	0·59	1·11	0·76	0·15	0·31	1·42	[0·40]	0·07
11	0·00	[0·79]	1·80	1·00	0·26	0·79	1·35	[0·57]	0·47	0·62	0·79	0·01
12	0·07	0·05	1·43	0·62	[0·22]	1·04	0·34	0·40	0·68	0·34	0·52	0·26
13	0·10	0·30	0·31	0·50	0·19	3·05	0·18	0·06	0·10	[0·65]	0·25	0·57
14	[0·03]	0·47	0·18	[0·74]	0·18	3·32	[0·43]	0·19	0·63	0·54	0·29	0·87
15	0·00	0·65	0·82	1·02	0·01	1·94	0·28	0·60	[0·50]	0·42	2·01	[0·36]
16	0·00	1·62	2·25	0·76	0·02	[1·41]	0·26	0·25	0·89	0·56	1·24	0·30
17	0·00	0·24	[0·78]	0·52	1·94	0·06	0·15	0·67	0·34	1·47	[1·21]	0·09
18	1·38	[0·78]	0·04	0·60	0·69	0·02	0·15	[0·66]	0·37	0·47	2·14	0·09
19	1·67	1·44	0·32	0·69	[0·91]	0·09	0·18	0·55	0·29	0·49	0·74	0·04
20	0·17	0·64	1·09	0·61	1·12	0·24	0·18	1·41	0·53	[0·45]	0·82	0·02
21	[0·56]	0·08	0·42	[1·03]	1·62	0·53	[0·20]	0·47	0·08	0·11	0·17	0·01
22	0·05	0·06	0·35	0·32	0·06	0·84	0·50	0·05	[0·24]	0·09	0·15	[0·03]
23	0·00	0·29	0·20	1·74	0·08	[0·55]	0·12	0·17	0·15	0·10	0·37	0·03
24	0·10	0·63	[0·43]	2·23	0·11	0·26	0·08	0·11	0·09	0·02	[0·52]	0·03
25	1·01	[0·67]	0·71	0·52	0·41	0·96	0·21	[0·19]	0·29	0·22	0·07	0·08
26	0·59	2·35	0·38	0·85	[0·23]	0·45	0·11	0·52	0·91	0·40	0·31	0·28
27	0·42	0·48	0·51	0·92	0·60	0·20	0·08	0·23	0·96	[0·29]	2·07	0·02
28	[1·36]	0·19	0·52	[0·42]	0·02	0·23	[0·26]	0·09	0·82	0·21	1·16	0·02
29	2·32	0·08	0·20	0·08	0·19	0·19	0·71	0·17	[1·51]	0·24	0·45	[0·07]
30	2·45		0·00	0·05	0·24	[0·16]	0·20	0·11	1·46	0·64	0·05	0·03
31	1·40		[0·49]		0·10		0·28	0·20		1·57		0·04
Mean	0·53	0·58	0·79	0·66	0·35	0·78	0·26	0·55	0·48	0·83	0·95	0·16

Table XXV. contains the means of the maximum pressures of wind recorded by the anemometer *between* the hours of observation: Table XXVI., which follows, contains the means of the maximum pressures recorded within about 10^{m} *at* the hour of observation. The latter, therefore, will represent more nearly the *mean* pressure of the wind; they would require, however, to be multiplied by a constant coefficient to obtain the true mean; this coefficient has not been yet ascertained.

Annual Variation of the maximum *Pressures of Wind*.—From Table XXV. the mean of the maximum pressures between the hours of observation was greatest in November and least in July. The following are the means for the meteorological quarters:—

		lb.			lb.
Winter,	Dec., Jan., Feb.,	0·42	Summer,	June, July, Aug.,	0·53
Spring,	March, April, May,	0·60	Autumn,	Sept., Oct., Nov.,	0·75

lb.
The year 1844,......0·58

The pressure is greatest in autumn, is least in winter, and is less in summer than in spring. The mean for July, August, and September is as small as that for winter.

TABLE XXVI.—Daily, Weekly, and Monthly Means of the Pressure of Wind, in Pounds on the Square Foot of Surface, deduced from the greatest pressures observed within 10^{m} *at* the hours of observation, in 1844.

Civil. Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1	0·00	0·04	0·65	0·18	0·05	0·04	0·14	0·47	[0·16]	1·00	1·94	[0·22]
2	0·07	0·05	1·03	1·11	0·00	[0·20]	0·02	0·30	0·08	2·65	2·39	0·01
3	0·55	0·10	[0·48]	0·15	0·10	0·00	0·06	0·38	0·23	1·78	[1·39]	0·01
4	0·00	[0·10]	0·67	0·00	0·08	0·57	0·09	[0·69]	0·41	0·54	0·88	0·16
5	0·21	0·00	0·12	0·07	[0·06]	0·39	0·01	0·05	0·52	0·13	0·76	0·06
6	0·00	0·00	0·39	0·07	0·14	0·29	0·05	1·45	0·22	[0·87]	1·30	0·03
7	[0·13]	0·42	0·02	[0·17]	0·00	0·55	[0·14]	1·49	0·16	0·16	0·08	0·51
8	0·00	1·11	0·48	0·37	0·02	0·84	0·13	1·07	[0·28]	0·48	0·32	[0·11]
9	0·59	0·92	2·70	0·22	0·03	[0·58]	0·09	0·70	0·23	2·11	0·10	0·04
10	0·00	0·78	[0·97]	0·30	0·39	0·67	0·46	0·07	0·22	1·04	[0·26]	0·02
11	0·00	[0·54]	1·30	0·64	0·11	0·50	0·84	[0·38]	0·32	0·39	0·57	0·00
12	0·01	0·00	1·15	0·35	[0·11]	0·65	0·27	0·27	0·49	0·28	0·32	0·11
13	0·08	0·16	0·19	0·27	0·08	1·91	0·09	0·03	0·06	[0·44]	0·20	0·34
14	[0·02]	0·25	0·09	[0·47]	0·04	2·45	[0·26]	0·15	0·45	0·27	0·12	0·61
15	0·00	0·38	0·60	0·65	0·00	1·27	0·09	0·46	[0·35]	0·28	1·24	[0·22]
16	0·00	1·11	1·56	0·60	0·02	[0·95]	0·17	0·19	0·58	0·36	0·80	0·18
17	0·00	0·15	[0·50]	0·32	1·14	0·00	0·08	0·43	0·25	1·09	[0·78]	0·05
18	0·93	[0·49]	0·00	0·36	0·31	0·00	0·07	[0·45]	0·25	0·29	1·51	0·03
19	1·18	0·89	0·17	0·39	[0·55]	0·07	0·12	0·35	0·16	0·20	0·52	0·00
20	0·08	0·40	0·60	0·37	0·57	0·11	0·11	0·88	0·31	[0·28]	0·47	0·00
21	[0·38]	0·04	0·27	[0·63]	1·19	0·31	[0·11]	0·37	0·06	0·01	0·08	0·01
22	0·00	0·05	0·16	0·22	0·05	0·60	0·24	0·02	[0·14]	0·05	0·05	[0·01]
23	0·00	0·14	0·14	1·06	0·05	[0·34]	0·13	0·10	0·10	0·05	0·18	0·02
24	0·09	0·44	[0·24]	1·40	0·07	0·13	0·02	0·05	0·05	0·01	[0·31]	0·02
25	0·70	[0·42]	0·49	0·29	0·28	0·58	0·13	[0·11]	0·17	0·12	0·03	0·04
26	0·32	1·51	0·17	0·55	[0·13]	0·33	0·07	0·27	0·75	0·26	0·22	0·14
27	0·22	0·32	0·23	0·64	0·25	0·08	0·04	0·18	0·75	[0·18]	1·29	0·00
28	[0·92]	0·07	0·22	[0·26]	0·02	0·12	[0·15]	0·05	0·54	0·11	0·82	0·00
29	1·81	0·04	0·08	0·03	0·11	0·10	0·39	0·10	[1·12]	0·15	0·28	[0·02]
30	1·60		0·00	0·03	0·15	[0·09]	0·11	0·07	1·03	0·44	0·02	0·00
31	0·87		[0·29]		0·05		0·17	0·10		1·06		0·01
Mean	0·34	0·37	0·52	0·41	0·20	0·50	0·16	0·37	0·34	0·57	0·63	0·09

Annual Variation of the mean *Pressures of Wind.*—It will be seen that the means at the foot of Table XXVI. vary in the same way as the means at the foot of Table XXV. The means for each of the meteorological quarters and for the year are as follow:—

		lb.			lb.
Winter,	Dec., Jan., Feb.,	0·27	Summer,	June, July, Aug.,	0·34
Spring,	March, April, May,	0·38	Autumn,	Sept., Oct., Nov.,	0·51

lb.
The mean pressure for the year 1844,......0·37

The mean pressure of the wind is greatest in autumn and is least in winter, as before.

The monthly means of the maximum pressures (foot of Table XXV.) bear to the monthly means of the approximate mean pressures (foot of Table XXVI.) the following ratios:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1·56	1·57	1·52	1·61	1·67	1·56	1·63	1·49	1·41	1·46	1·51	1·78

TABLE XXVII.—Mean Pressure of Wind with reference to the Moon's Age and Declination in 1844.

Moon's Age.	Pressure of Wind.	Moon's Age.	Pressure of Wind.	After Moon farthest North.	Pressure of Wind.	After Moon farthest North.	Pressure of Wind.
Day.	lb.	Day.	lb.	Day.	lb.	Day.	lb.
15	0·28	0	0·46	0	0·79	14	0·23
16	0·17	1	0·28	1	0·57	15	0·26
17	0·30	2	0·32	2	0·53	16	0·36
18	0·28	3	0·23	3	0·45	17	0·38
19	0·31	4	0·34	4	0·34	18	0·38
20	0·80	5	0·32	5	0·23	19	0·33
21	0·61	6	0·54	6	0·38	20	0·29
22	0·68	7	0·42	7	0·42	21	0·29
23	0·52	8	0·40	8	0·34	22	0·32
24	0·44	9	0·31	9	0·25	23	0·25
25	0·34	10	0·34	10	0·27	24	0·25
26	0·35	11	0·21	11	0·53	25	0·58
27	0·65	12	0·19	12	0·26	26	0·79
28	0·59	13	0·19	13	0·21	27	0·80
29	0·39	14	0·21				

Table XXVII. has been formed from Table XXVI. in the manner already described for Table II. of the magnetical results.

Pressure of Wind with reference to the Moon's Age.—The means of groups for the first portion of Table XXVII. are as follow.

	lb.		lb.
12 days to 18 days, Full Moon,	0·23	27 days to 3 days, New Moon,	0·42
15 ...... 22 ...	0·43	0 ...... 7 ...	0·36
19 ...... 26 ...	0·51	4 ...... 11 ...	0·36
23 ...... 29 ...	0·47	8 ...... 14 ...	0·26

The pressure of the wind in 1844 was a minimum at full moon, and it was a maximum about 5 days before new moon.

Pressure of Wind with reference to the Moon's Declination.—The following are the means of groups for the second part of Table XXVII.

	lb.		lb.
25 days to 3 days, Moon farthest North,	0·64	11 days to 17 days, Moon farthest South,	0·32
0 ...... 6 ...	0·47	14 ...... 20 ...	0·32
4 ...... 10 ...	0·32	18 ...... 24 ...	0·30
7 ...... 13 ...	0·33	21 ...... 27 ...	0·47

The result for the year 1844 is very marked. The pressure of the wind is a maximum when the moon is farthest north, and it is constant for each of the groups from four days *after* the moon was farthest north till four days *before* it was farthest north; the pressure of the most northerly group is twice as great as that for the southerly groups.

TABLE XXVIII.—Maximum Pressure of Wind in each Civil Day in 1844, with the Monthly Means.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1	0·6	0·5	3·8	2·1	0·4	0·4	0·7	1·7	1·0	3·3	3·7	0·2
2	0·5	0·6	4·0	4·3	0·0	0·1	0·2	1·1	0·4	6·8	4·8	0·1
3	3·0	0·4	4·8	0·8	1·0	0·3	0·5	1·6	1·2	7·0	3·1	0·2
4	0·2	0·0	3·5	0·0	0·6	2·7	0·3	0·6	1·5	2·3	1·8	0·8
5	1·8	0·0	0·6	1·5	0·9	2·5	0·1	0·4	1·9	0·5	2·3	0·7
6	0·1	0·0	2·5	0·5	1·2	1·1	0·5	3·8	0·5	3·4	4·5	0·2
7	0·0	2·6	0·2	0·2	0·1	2·4	0·8	4·4	0·9	0·6	0·7	3·5
8	0·0	3·5	3·1	2·0	0·6	2·5	0·8	3·0	0·8	2·8	1·4	0·2
9	2·3	4·2	9·3	1·3	0·4	2·5	0·7	2·6	0·9	5·5	1·0	0·7
10	0·0	2·1	3·8	1·8	1·7	2·4	1·8	0·4	0·7	3·0	0·1	0·1
11	0·1	1·9	5·5	3·0	1·1	2·2	2·6	1·0	1·0	1·7	3·3	0·1
12	1·0	0·0	3·8	2·5	0·8	2·3	1·2	0·9	1·9	1·3	2·6	2·7
13	0·8	1·3	1·7	1·9	1·1	5·5	0·5	0·2	0·3	1·9	1·0	1·3
14	1·9	2·0	1·0	1·2	0·9	6·4	2·9	0·8	1·7	1·4	1·7	1·6
15	0·0	1·7	2·7	4·0	0·1	4·5	0·7	1·9	0·7	1·5	4·5	0·4
16	0·0	4·1	4·2	3·1	0·4	0·7	0·7	0·9	1·8	1·3	1·8	0·8
17	0·0	1·2	0·8	1·8	4·0	0·2	0·5	1·7	0·8	2·2	2·8	0·6
18	4·4	1·9	0·1	2·0	2·1	0·2	0·5	3·3	1·2	1·2	4·3	0·3
19	6·2	3·3	1·4	1·8	1·8	0·4	1·0	1·7	1·3	2·1	4·0	0·1
20	0·8	3·1	3·7	1·5	2·2	1·0	0·4	3·0	1·5	0·9	2·0	0·1
21	0·8	0·4	1·2	0·6	3·0	1·7	1·2	1·2	0·3	0·2	0·5	0·1
22	0·2	0·7	1·5	1·9	0·3	2·2	1·4	0·2	0·2	0·5	1·0	0·1
23	0·0	2·3	0·5	4·8	0·4	0·9	0·9	0·4	0·4	0·4	1·4	0·1
24	1·2	3·0	3·3	4·5	0·5	0·6	1·0	0·4	0·2	0·2	0·3	0·2
25	3·5	1·4	2·1	2·4	1·0	1·7	1·2	0·6	1·1	1·2	0·2	0·4
26	2·8	5·2	3·0	2·3	3·1	1·4	0·4	2·2	1·7	0·9	1·5	1·3
27	0·9	2·3	1·9	2·4	1·4	0·5	0·4	0·7	1·7	0·7	3·4	0·1
28	4·8	1·2	2·9	0·5	0·2	0·8	1·6	0·3	1·6	0·8	2·0	0·1
29	5·7	0·9	0·8	0·6	0·5	0·6	1·7	0·7	0·7	0·7	1·7	0·3
30	5·7		0·0	0·3	0·7	0·7	1·0	0·3	3·8	1·7	0·2	0·1
31	4·1		1·4		0·3		0·7	0·6		2·5		0·1
Mean	1·7	1·8	2·5	1·9	1·1	1·7	0·9	1·4	1·1	2·0	2·1	0·6

The mean of the daily maximum pressures of wind was greatest in March, November, and October, and was least in December and July. The greatest pressure of wind occurred March 9, 1844.

TABLE XXIX.—Means of the Maximum Pressure of Wind between the Hours of Observation for each Month in 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
h. h.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
11—12	0·66	0·35	0·48	0·28	0·18	0·40	0·10	0·35	0·26	0·64	0·94	0·14
12—13	0·52	0·35	0·48	0·21	0·19	0·58	0·09	0·31	0·26	0·71	0·87	0·14
13—14	0·32	0·43	0·51	0·25	0·20	0·48	0·09	0·28	0·25	0·70	0·83	0·14
14—15	0·46	0·48	0·43	0·28	0·13	0·42	0·06	0·28	0·19	0·71	0·78	0·10
15—16	0·49	0·44	0·40	0·39	0·20	0·42	0·06	0·25	0·19	0·76	0·82	0·10
16—17	0·36	0·32	0·33	0·33	0·23	0·46	0·04	0·33	0·27	0·68	0·79	0·10
17—18	0·26	0·42	0·40	0·33	0·23	0·58	0·09	0·35	0·32	0·71	0·86	0·12
18—19	0·39	0·43	0·37	0·47	0·27	0·78	0·14	0·42	0·34	0·73	0·88	0·10
19—20	0·41	0·39	0·55	0·70	0·36	0·99	0·24	0·53	0·47	0·62	0·83	0·12
20—21	0·66	0·45	0·94	0·83	0·46	1·04	0·34	0·48	0·56	0·68	1·01	0·09
21—22	0·57	0·52	1·10	1·11	0·46	0·98	0·40	0·66	0·61	1·00	1·12	0·08
22—23	0·73	0·76	1·08	1·10	0·50	1·02	0·43	0·72	0·67	1·12	1·05	0·10
23— 0	0·65	0·67	1·37	1·24	0·50	1·07	0·49	0·82	0·71	1·29	1·05	0·16
0— 1	0·89	0·69	1·42	1·27	0·54	1·18	0·53	0·91	0·84	1·26	1·22	0·15
1— 2	0·80	0·81	1·60	1·43	0·52	1·20	0·53	0·91	0·80	1·31	1·13	0·14
2— 3	0·72	0·92	1·50	1·33	0·54	1·24	0·41	0·94	0·83	0·95	0·98	0·16
3— 4	0·54	0·83	1·20	1·25	0·54	1·11	0·39	0·84	0·79	0·95	1·00	0·14
4— 5	0·56	0·66	0·87	0·82	0·55	1·04	0·37	0·85	0·65	0·85	1·22	0·23
5— 6	0·34	0·70	0·89	0·72	0·41	0·96	0·41	0·82	0·51	0·79	1·02	0·24
6— 7	0·36	0·65	0·62	0·47	0·33	0·72	0·31	0·56	0·43	0·62	1·03	0·20
7— 8	0·37	0·81	0·60	0·28	0·23	0·61	0·17	0·40	0·40	0·70	0·88	0·26
8— 9	0·50	0·61	0·47	0·23	0·18	0·46	0·13	0·36	0·39	0·69	0·83	0·26
9—10	0·45	0·52	0·57	0·17	0·16	0·36	0·16	0·39	0·38	0·65	0·74	0·28
10—11	0·53	0·57	0·48	0·23	0·19	0·50	0·10	0·34	0·35	0·68	0·83	0·28

In obtaining the means for the maximum pressures between 11^h and 12^h, the observations at 12^h on Monday morning were rejected (excepting when the maximum between 12^h and 1^h was greater), being the maxima from Saturday night or Sunday about noon, the maximum between 12^h and 1^h being used instead.

TABLE XXX.—Means of the Maximum Pressure of Wind between the Hours of Observation for each of the Astronomical Quarters, and for the Year 1844.

Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.	Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.
h. h.	lb.	lb.	lb.	lb.	lb.	h. h.	lb.	lb.	lb.	lb.	lb.
11—12	0·58	0·37	0·23	0·42	0·43	23—0	0·62	1·09	0·69	0·94	0·83
12—13	0·51	0·35	0·29	0·43	0·39	0—1	0·75	1·13	0·75	1·00	0·91
13—14	0·43	0·40	0·26	0·41	0·37	1—2	0·69	1·28	0·75	1·01	0·93
14—15	0·45	0·40	0·20	0·39	0·36	2—3	0·62	1·25	0·73	0·91	0·88
15—16	0·47	0·41	0·23	0·40	0·38	3—4	0·56	1·09	0·68	0·86	0·80
16—17	0·42	0·43	0·24	0·43	0·35	4—5	0·67	0·78	0·65	0·78	0·72
17—18	0·41	0·38	0·30	0·46	0·39	5—6	0·53	0·77	0·59	0·71	0·65
18—19	0·46	0·42	0·40	0·50	0·44	6—7	0·53	0·58	0·45	0·54	0·52
19—20	0·45	0·55	0·53	0·54	0·52	7—8	0·50	0·56	0·34	0·50	0·48
20—21	0·59	0·74	0·61	0·57	0·63	8—9	0·53	0·44	0·26	0·48	0·43
21—22	0·59	0·91	0·61	0·76	0·72	9—10	0·49	0·42	0·23	0·47	0·40
22—23	0·63	0·98	0·65	0·84	0·77	10—11	0·55	0·43	0·26	0·46	0·42

TABLE XXXI.—Hourly Means of the Maximum Pressure of Wind within 10^m *at* the Observation Hours for each Month in 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
12	0·38	0·22	0·24	0·08	0·09	0·28	0·04	0·20	0·17	0·48	0·53	0·08	0·23
13	0·23	0·22	0·29	0·08	0·14	0·25	0·04	0·19	0·17	0·51	0·61	0·06	0·23
14	0·32	0·27	0·31	0·21	0·06	0·30	0·06	0·15	0·14	0·57	0·51	0·06	0·25
15	0·33	0·33	0·31	0·18	0·06	0·24	0·04	0·21	0·12	0·55	0·60	0·06	0·25
16	0·31	0·22	0·19	0·21	0·12	0·36	0·02	0·20	0·12	0·51	0·57	0·05	0·24
17	0·20	0·22	0·22	0·20	0·15	0·38	0·03	0·20	0·20	0·41	0·57	0·06	0·24
18	0·21	0·20	0·22	0·19	0·13	0·46	0·05	0·23	0·19	0·52	0·58	0·06	0·25
19	0·21	0·36	0·30	0·27	0·17	0·62	0·09	0·32	0·25	0·41	0·55	0·08	0·30
20	0·27	0·23	0·50	0·58	0·30	0·66	0·19	0·37	0·38	0·44	0·57	0·08	0·38
21	0·32	0·27	0·68	0·83	0·30	0·73	0·20	0·47	0·42	0·66	0·72	0·04	0·47
22	0·39	0·33	0·71	0·76	0·29	0·72	0·32	0·46	0·52	0·74	0·63	0·04	0·49
23	0·48	0·50	0·87	0·75	0·34	0·74	0·27	0·50	0·51	0·78	0·58	0·04	0·53
0	0·43	0·49	0·96	0·96	0·28	0·79	0·30	0·60	0·53	0·80	0·88	0·10	0·59
1	0·59	0·57	1·39	0·75	0·34	0·74	0·36	0·67	0·64	0·81	0·73	0·08	0·64
2	0·67	0·66	1·10	0·91	0·36	0·84	0·32	0·61	0·60	0·89	0·61	0·08	0·64
3	0·32	0·48	0·85	0·79	0·36	0·78	0·24	0·58	0·58	0·75	0·69	0·10	0·54
4	0·44	0·50	0·68	0·62	0·30	0·70	0·23	0·58	0·46	0·52	0·68	0·07	0·48
5	0·39	0·33	0·51	0·57	0·28	0·66	0·30	0·47	0·45	0·55	0·82	0·17	0·46
6	0·29	0·48	0·48	0·31	0·16	0·49	0·21	0·48	0·32	0·42	0·70	0·12	0·37
7	0·21	0·51	0·32	0·17	0·12	0·38	0·16	0·34	0·25	0·49	0·70	0·11	0·32
8	0·29	0·42	0·30	0·10	0·12	0·31	0·07	0·31	0·23	0·45	0·64	0·21	0·29
9	0·27	0·49	0·35	0·07	0·09	0·17	0·07	0·27	0·26	0·45	0·57	0·12	0·27
10	0·30	0·39	0·37	0·10	0·06	0·21	0·06	0·25	0·23	0·45	0·60	0·17	0·27
11	0·39	0·31	0·30	0·12	0·11	0·24	0·05	0·30	0·33	0·43	0·59	0·20	0·28

TABLE XXXII.—Hourly Means of the Maximum Pressure of Wind within 10^m at the Observation Hours for each of the Astronomical Quarters, and for the Year 1844.

Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.	Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.
h.	lb.	lb.	lb.	lb.	lb.	h.	lb.	lb.	lb.	lb.	lb.
12	0·33	0·18	0·14	0·28	0·23	0	0·47	0·80	0·46	0·64	0·59
13	0·30	0·20	0·14	0·29	0·23	1	0·47	0·90	0·48	0·71	0·64
14	0·30	0·26	0·14	0·29	0·25	2	0·45	0·89	0·51	0·70	0·64
15	0·33	0·27	0·11	0 29	0·25	3	0·37	0·71	0·46	0·64	0·54
16	0·31	0·21	0·17	0·28	0·24	4	0·40	0·60	0·41	0·52	0·48
17	0·28	0·21	0·19	0·27	0·24	5	0·46	0·47	0·41	0·49	0·46
18	0·28	0·20	0·21	0·31	0·25	6	0·37	0·42	0·30	0·41	0·37
19	0·29	0·31	0·29	0·33	0·30	7	0·35	0·33	0·22	0·35	0·32
20	0·27	0·44	0·38	0·40	0·38	8	0·38	0·27	0·17	0·33	0·29
21	0·36	0·59	0·41	0·52	0·47	9	0·32	0·30	0·11	0·33	0·27
22	0·35	0·60	0·44	0·57	0·49	10	0·36	0·29	0·11	0·31	0·27
23	0·37	0·71	0·45	0·60	0·53	11	0·39	0·24	0·13	0·35	0·28

Diurnal Variation of the Maximum Pressures of Wind.—The diurnal variation is nearly the same from Tables XXIX. and XXXI. It is probable, however, that the times of maxima and minima deduced from the observations of pressure within 10^m at the hours of observation will be more accurate than those obtained

from the maxima between the hours of observation. From both Tables the diurnal variation for each month shews some irregularities; neglecting the means for December, the maximum force of wind (from Table XXXI.) occurs between noon and 2^h P.M. and the minimum occurs between 9^h P.M. and 6^h A.M.; in December the maximum pressure occurred about 10^h P.M. and the minimum about 10^h A.M. The approximate epochs of pressure of wind from Tables XXX. and XXXII. for each of the astronomical quarters and the year are as follow:—

		From Table XXX.		From Table XXXII.	
		Minimum.	Maximum.	Minimum.	Maximum.
Winter,	Nov., Dec., Jan.,	5^h 10^m A.M.	0^h 40^m P.M.	6^h 40^m A.M.	1^h 0^m P.M.
Spring,	Feb., March, April,	12 50 ...	2 0 ...	12 10 ...	1 40 ...
Summer,	May, June, July,	3 0 ...	1 40 ...	9 40 P.M. and 3^h A.M.	2 10 ...
Autumn,	Aug., Sept., Oct.,	3 10 ...	1 10 ...	4 50 ...	1 40 ...
The Year 1844,		4 10 ...	1 50 ...	12 40 A.M.	1 40 ...

The epochs from Table XXXII. are most to be depended on. The differences between the two sets are chiefly in the times of minimum pressure, and these times are not well marked. In the winter quarter, considering the means from Table XXXII., the pressure varies little from 9^h P.M. till 8^h A.M.: there is the appearance of a secondary maximum about midnight. In spring the minimum occurs at midnight, but there is again a minimum about 5^h A.M., a secondary maximum occurring between these times; in summer the pressure is nearly constant from 9^h P.M. till 4^h A.M., and in autumn it is nearly constant from midnight till 6^h A.M. In the mean for the year the pressure of wind varies little from 9^h P.M. till 6^h A.M.; there is a slight indication of a secondary maximum about 2^h or 3^h A.M.: the maximum pressure occurs almost exactly at the time of the maximum temperature of the air.

Annual Variation of the number *of times which the Wind blew in* 1844.—From Table XXXIII. the numbers of times which the wind blew with a force of 0·1 lb., or upwards, at the hours of observation in 1844 were for each month as follow:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
233	308	382	371	275	400	306	434	442	459	459	176

The average numbers a-day out of 24 observations are

8·6	12·3	14·7	14·3	10·2	16·0	11·3	16·1	17·7	17·0	17·7	6·8

The wind blew most frequently in the months from August to November, and with least frequency in January and December. On the whole the wind blew seldomest about the winter solstice and oftener about the equinoxes than about the summer solstice: this result is the reverse of that for 1843.

In 7536 observations, the wind blew 0·1 lb. or upwards 4245 times, or 13·5 times a-day of 24 observations, or 563 times in 1000.

Annual Variation of the number *of Points of the Compass in which the Wind blew.*—The following are the numbers of points in which the wind blew in each month of 1844:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
19	28	29	19	26	29	32	30	26	31	28	22

Neglecting the points in which the wind was observed to blow less than four times, the numbers of points are

16	19	22	13	22	20	23	24	20	28	23	15

The wind blew from the fewest points in January, April, and December, and from the greatest number about October.

If we divide the number of points from which the wind blew by the number of times which it was observed blowing, the quotient will represent the variability of direction. The quotients for each month are as follow:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·082	·091	·076	·051	·095	·072	·105	·069	·059	·068	·061	·125

The direction of the wind was most variable in December and July, and least variable in April and September.

TABLE XXXIII.—Number of Times which the Wind blew from each Point of the Compass at the together with the sums of the Pres-

Wind blowing from	January.		February.		March.		April.		May.		June.	
	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.
		lb.		lb.		lb.		lb.		lb.		lb.
N.	2	1·1	9	12·7	11	12·4	...	...	18	20·1	3	0·6
N by E.	...	...	2	0·7	3	3·3	...	...	10	8·1	6	2·0
NNE.	...	...	14	19·9	8	9·1	...	...	84	37·7	35	13·1
NE by N.	...	...	9	14·3	7	11·4	...	...	51	24·8	21	9·2
NE.	...	...	6	9·8	12	11·7	1	0·3	27	7·7	20	5·3
NE by E.	...	...	...	...	11	13·6	1	0·5	13	9·6	6	1·4
ENE.	...	...	3	2·0	17	18·2	5	1·0	12	1·8	6	0·8
E by N.	...	...	4	6·8	1	0·1	...	...	2	0·4	5	0·6
E.	...	...	4	1·2	...	...	...	...	3	0·5	2	0·2
E by S.	...	...	3	0·6	1	0·1	...	...	...	...	1	0·1
ESE.	...	...	1	0·9	...	...	...	...	...	...	...	...
SE by E.	...	...	...	...	...	...	...	...	...	...	...	...
SE.	...	...	2	0·6	1	0·2	2	0·5	1	0·1	1	0·1
SE by S.	...	...	3	1·4	2	0·4	3	0·5	2	0·3	...	...
SSE.	4	2·0	3	0·8	2	0·6	1	0·1	10	3·1	1	0·4
S by E.	6	3·3	...	...	4	1·4	2	0·3	5	1·8	7	4·3
S.	9	7·0	1	0·1	1	1·0	...	...	1	0·1	9	3·3
S by W.	3	1·1	...	...	6	4·3	5	1·9	...	...	15	5·8
SSW.	20	7·8	4	1·4	18	5·0	28	12·2	2	0·3	47	29·2
SW by S.	14	11·0	12	7·5	33	29·9	74	52·2	2	0·3	42	34·6
SW.	29	25·5	76	46·2	94	69·4	113	86·9	2	0·2	68	69·2
SW by W.	9	5·2	24	9·1	20	12·2	38	19·7	...	...	17	21·7
WSW.	19	19·0	14	6·8	13	12·0	16	5·6	...	...	26	21·5
W by S.	20	23·5	9	7·7	7	5·0	13	8·1	2	0·2	13	18·9
W.	29	50·7	10	9·4	14	24·6	20	13·0	3	0·7	15	22·9
W by N.	13	14·2	5	4·2	12	8·7	19	19·2	2	0·3	12	16·1
WNW.	10	12·4	3	0·8	7	6·0	17	21·1	3	0·5	9	16·1
NW by W.	6	8·1	10	10·4	5	15·9	7	7·1	1	0·6	2	2·3
NW.	27	21·3	33	14·6	27	16·1	6	5·0	3	1·0	3	0·3
NW by N.	4	2·2	10	4·3	14	8·4	...	...	4	1·1	1	0·1
NNW.	8	7·8	17	10·5	19	16·0	...	...	4	1·3	1	0·3
N by W.	1	0·2	17	20·3	12	6·9	...	...	8	4·8	6	1·5

Observation Hours, with a Pressure of one-tenth of a pound or upwards on a square foot of surface, sures, for each Month in 1844.

July.		August.		September.		October.		November.		December.		Wind blowing from
Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	Times.	Press.	
	lb.		lb.		lb.		lb.		lb.		lb.	
5	1·4	7	4·9	2	0·3	3	0·4	1	0·1	...	...	N.
5	0·8	2	0·2	2	0·2	9	2·2	1	0·1	1	0·1	N by E.
17	4·3	3	0·5	23	7·6	20	5·9	9	6·4	4	0·5	NNE.
7	1·4	6	1·7	32	8·9	6	1·3	14	14·4	2	0·3	NE by N.
23	4·5	17	5·2	80	24·9	9	1·6	62	50·8	15	2·9	NE.
8	2·0	7	5·3	27	17·6	...	...	7	3·9	5	0·6	NE by E.
14	2·3	14	11·7	33	14·6	3	0·5	30	23·5	11	4·4	ENE.
2	1·4	3	1·5	1	0·6	4	0·8	16	38·9	14	5·8	E by N.
7	1·3	4	2·1	4	2·5	9	2·0	13	24·0	23	10·8	E.
2	0·4	...	...	...	...	4	1·2	7	14·8	4	2·2	E. by S.
2	0·4	3	0·4	...	...	10	7·0	6	6·6	10	2·9	ESE.
1	0·2	2	0·2	...	...	8	9·1	3	4·2	1	0·9	SE by E.
7	1·2	...	...	1	0·1	35	30·4	5	0·9	10	2·3	SE.
8	2·2	1	2·4	...	...	15	28·6	...	...	1	0·2	SE by S.
4	1·1	15	11·9	...	...	16	22·4	6	3·1	21	9·9	SSE.
3	1·3	4	0·9	...	...	17	8·8	6	1·8	16	5·1	S by E.
5	0·9	6	4·2	1	0·1	18	21·9	26	5·7	13	5·9	S.
3	0·4	5	3·6	5	2·6	19	8·1	20	9·6	...	...	S by W.
6	1·0	19	10·1	23	12·1	22	8·5	50	41·9	9	1·2	SSW.
7	4·1	19	22·3	20	14·1	11	6·7	29	25·7	1	0·1	SW by S.
40	15·8	51	23·8	69	46·7	52	39·6	76	71·3	7	0·7	SW.
20	8·6	21	8·3	19	10·5	17	10·8	21	16·1	4	0·4	SW by W.
17	7·9	46	19·6	34	18·1	38	26·8	18	10·5	2	0·2	WSW.
14	2·7	28	19·2	21	7·6	10	15·8	8	7·5	...	...	W by S.
13	4·9	34	18·8	20	5·4	14	11·2	11	7·5	...	...	W.
3	1·9	22	20·1	7	3·2	8	11·9	5	4·4	...	...	W by N.
6	3·4	17	8·4	6	1·4	19	33·9	5	1·6	...	...	WNW.
3	1·7	8	5·8	2	1·1	4	2·2	...	...	...	...	NW by W.
19	9·7	28	12·6	4	0·7	34	29·8	3	0·9	...	...	NW.
3	1·9	14	4·1	...	...	12	9·0	...	...	...	...	NW by N.
17	5·6	18	6·1	...	...	11	7·1	...	...	2	0·2	NNW.
15	3·9	10	5·7	6	1·0	2	1·7	1	0·1	...	...	N by W.

Annual Variation of the Mean Pressure of Wind when blowing.—The annual variation of the mean pressure of wind, obtained by dividing the sums of pressures observed, by the whole number of observations, has been already considered. If, however, we divide the sums of pressures observed by the number of observations for which a pressure of 0·1 lb. or more was observed, we obtain the means of pressures for the *time* which the wind blew. The sums of pressure for each month from Table XXXIII. are as follow:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
223·4	225·0	323·9	255·2	127·4	301·9	100·7	241·6	201·9	367·2	396·3	57·5

Dividing these quantities by the number of times which the wind blew in the respective months we have

lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
0·96	0·73	0·85	0·69	0·46	0·75	0·33	0·56	0·46	0·80	0·86	0·33

These means shew generally that the pressure of the wind was least about the warmest quarter and greatest about the coldest quarter of 1844. The mean for December is an exception to the generality of the result for 1844.

The mean pressure with which the wind blew in 1844 = 0·665 lb.

TABLE XXXIV.—Sums of the Pressures of the Wind in Table XXXIII., resolved into the Four Cardinal Points of the Compass, together with the Value and Direction of the Resultant, for each Month, for each of the Meteorological and Astronomical Quarters, and for the Year 1844.

Period 1844.	Sums of Pressures resolved into				Resultant			
	N.	E.	S.	W.	Sums.	Means with reference to Whole No. of Obs.	Means with reference to No. of Obs. Wind blowing.	Directions.
	lb.	lb.	lb.	lb.	lb.	lb.	lb.	°
January	37·4	1·4	62·2	174·4	174·8	0·27	0·75	W. 8 S.
February	103·1	34·7	52·7	102·4	84·4	0·14	0·27	W. 37 N.
March	109·2	47·7	98·6	169·8	122·6	0·20	0·32	W. 5 N.
April	20·1	2·3	133·9	185·7	215·8	0·35	0·58	W. 32 S.
May	103·0	47·8	5·7	5·3	106·2	0·16	0·39	N. 24 E.
June	39·9	18·1	142·4	193·0	202·7	0·34	0·51	W. 30 S.
July	33·0	16·0	30·4	53·2	37·3	0·06	0·12	W. 4 N.
August	52·2	30·3	82·3	143·3	116·9	0·18	0·27	W. 15 S.
September	51·2	56·7	72·9	90·2	39·9	0·07	0·09	W. 33 S.
October	64·1	70·8	173·3	171·0	148·2	0·23	0·32	S. 43 W.
November	75·0	159·8	153·1	126·9	84·7	0·14	0·18	S. 23 E.
December	6·2	35·7	25·8	1·7	39·3	0·06	0·22	E. 30 S.
Mean Met. Qrs.								
Spring	232·3	97·8	238·2	360·8	263·1	0·14	0·26	W. 1 S.
Summer	125·1	64·4	255·1	389·5	350·1	0·18	0·31	W. 22 S.
Autumn	190·3	287·3	399·3	388·1	232·0	0·12	0·17	S. 26 W.
Winter	146·7	71·8	140·7	278·5	206·8	0·11	0·29	W. 2 N.
Astron. Qrs.								
Spring	232·4	84·7	285·2	457·9	376·9	0·20	0·35	W. 8 S.
Summer	175·9	81·9	178·5	251·5	169·6	0·09	0·17	W. 1 S.
Autumn	167·5	157·8	328·5	404·5	294·6	0·16	0·22	W. 33 S.
Winter	118·6	196·9	241·1	303·0	162·1	0·09	0·19	S. 41 W.
The Year	694·4	521·3	1033·3	1416·9	957·6	0·13	0·23	W. 21 S.

Spring for the meteorological quarters = March, April, May; and for the astronomical quarter = February, March, April.

The first column of resultant means is obtained by dividing the resultant sums by the whole number of observations of 24 a-day; the second column is obtained by dividing the resultant sums by the number of observations for which the wind was blowing.

Annual Variation of the Resultant Pressure of the Wind.—The resultant mean, with reference to the whole number of observations, was greatest in April and least in July, September, and December. It was greatest in the meteorological summer and least in the meteorological winter; it was greatest in the astronomical spring and least in the astronomical summer and winter. The resultant mean, with reference to the time during which the wind was blowing, was greatest in January and was least in September; it was greatest in the meteorological summer and least in the autumn; it was greatest in the astronomical spring and least in the summer.

The direction of the resultant was between W. and N. in February, March, and July; between S. and W. in January, April, June, August, September, and October; between N. and E. in May; and between S. and E. in November and December. The direction of the resultant for the meteorological quarters is between S. and W. in the quarters, spring, summer, and autumn, and it is nearly W. in winter; it is between S. and W. in all the astronomical quarters.

The direction of the resultant pressure of wind for 1844, ... =W. 21° S.
.... 1843, (Table XXXII., p. 299, 1843) =W. 21° S.

Diurnal Variation of the number *of Times which the Wind blew* 0·1 lb., or upwards, in 1844. From Table XXXV. the numbers for each hour are as follow:—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
122	132	126	137	125	133	143	167	195	204	218	225	236	237	237	232	217	216	197	174	149	139	139	148

The wind blew oftenest about $1^h\ 20^m$ P.M., nearly the time of maximum temperature and seldomest about 2^h A.M., the number being twice as great for the maximum as for the minimum.

Diurnal Variation of the number *of Points of the Compass from which the Wind blew.*—The numbers of points in which the wind blew (0·1 lb., or upwards) oftener than once, twice, or thrice, are as follow:—

Oftener than	12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
0 times,	27	29	29	25	27	25	28	28	30	30	30	31	30	32	32	30	30	31	32	28	28	29	30	30
1	22	23	20	22	24	22	21	26	25	26	28	29	30	30	28	30	28	28	28	25	24	22	23	22
2	18	16	16	18	17	17	17	18	22	22	27	24	27	28	25	27	27	26	23	21	18	16	19	19
3	13	11	12	13	13	12	15	16	18	20	23	21	20	24	23	21	21	23	18	17	15	14	14	15

The wind blows from the greatest number of points about the time of maximum temperature, and from the least number about the time of minimum temperature. If we divide the number of points for each hour by the number of times which the wind blew from them, the quotient will represent the variability of direction. These quotients are as follow:—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
0·22	0·22	0·23	0·18	0·22	0.19	0·20	0·17	0·15	0·15	0·14	0·14	0·13	0·14	0·14	0·13	0·14	0·14	0·17	0·16	0·19	0·21	0·22	0·20

If the points of the compass be rejected for which the wind blew only once, the variability at the several hours will be represented by the following quantities:—

0·19	0·18	0·17	0·17	0·20	0·17	0·15	0·16	0·13	0·13	0·13	0·13	0·13	0·13	0·12	0·13	0·13	0·13	0·15	0·15	0·17	0·17	0·17	0·16

From both series the variability of direction of the wind is least about the time of maximum temperature and greatest about midnight. The variability, however, has nearly a constant value from 8^h A.M. till 5^h P.M.

Diurnal Variation of the Mean Pressure of Wind while *blowing.*—If we divide the sums of pressures for each hour (obtained from Table XXXV.) by the number of times which the wind was observed blowing, we obtain the following mean pressures:—

12^h	1^h A.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h	0^h	1^h P.M.	2^h	3^h	4^h	5^h	6^h	7^h	8^h	9^h	10^h	11^h
0·60	·55	·61	·58	·60	·56	·56	·57	·61	·72	·71	·74	·79	·84	·84	·73	·69	·66	·59	·57	·60	·60	·60	·60

The average pressure of the wind while blowing was greatest at $1^h\ 40^m$ P.M., and it was least about 6^h A.M.; it had nearly the same value about 7^h P.M. as at 6^h A.M., the pressure from 8^h P.M. till 4^h A.M. being slightly greater than at either of these hours.

TABLE XXXV.—Number of Times which the Wind blew from each Point of the Compass with the *sums* of the Pres-

Mak. M. T.	Number of times which the Wind blew from each															
	N.	N by E.	NNE.	NE by N.	NE.	NE by E.	ENE.	E by N.	E.	E by S.	ESE.	SE by E.	SE.	SE by S.	SSE.	S by E.
h. 12	...	1	4	3	9	4	5	2	3	...	2	1	1	...	...	5
13	...	2	6	5	11	1	5	1	2	2	2	1	2	1	1	2
14	...	1	7	6	8	1	1	2	4	1	1	1	1	1	2	3
15	...	1	9	5	9	4	3	3	...	...	3	...	1	...	3	...
16	...	...	4	7	6	2	2	4	2	...	1	2	...	1	3	1
17	2	1	3	5	8	...	4	4	...	...	...	2	...	...	2	3
18	2	2	5	5	9	3	5	1	1	...	1	1	...	...	1	2
19	2	1	7	11	6	2	8	2	3	1	...	...	2	...	2	2
20	4	1	11	6	10	4	6	3	3	...	1	1	2	1	1	2
21	5	1	12	9	10	6	5	2	2	1	...	...	1	3	2	2
22	3	3	11	8	16	4	5	4	5	1	...	1	3	2	...	4
23	6	3	11	5	16	8	5	1	4	2	3	...	4	2	2	2
0	3	5	9	12	15	5	11	2	7	...	3	...	3	3	5	2
1	3	3	13	7	10	7	10	4	5	1	3	1	5	2	5	4
2	5	1	15	7	13	6	11	3	2	1	2	1	7	2	8	3
3	2	3	14	9	17	9	6	4	2	3	...	...	5	2	11	4
4	3	2	15	3	19	4	13	1	7	1	...	...	6	3	4	5
5	3	1	10	7	16	6	10	4	3	2	1	...	7	1	9	7
6	2	2	11	5	16	3	10	3	3	2	2	1	3	1	9	4
7	2	...	15	8	13	1	4	1	3	...	2	...	5	3	3	2
8	2	4	11	6	8	1	4	...	3	...	...	...	3	3	1	2
9	7	...	4	5	7	3	5	...	2	1	1	...	2	2	2	4
10	2	1	5	3	10	1	5	1	2	...	2	1	1	1	3	4
11	3	2	5	8	10	...	5	...	1	3	2	1	1	1	4	1
Sums	61	41	217	155	272	85	148	52	69	22	32	15	65	35	83	70

	Sums of Pressures with which the Wind blew from															
h.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
12	...	0·2	1·6	1·1	3·4	1·3	1·5	0·4	1·8	...	1·8	1·4	0·6	...	...	3·4
13	...	0·3	1·8	5·2	2·8	0·3	1·1	0·1	0·5	3·1	1·7	2·0	0·9	2·8	0·1	0·7
14	...	0·3	2·4	1·9	5·3	0·5	0·1	1·0	2·9	0·4	0·3	1·3	1·7	1·8	3·2	0·6
15	...	0·1	2·1	2·8	4·1	0·9	0·9	6·7	...	...	1·3	...	0·8	...	4·9	...
16	...	...	2·1	3·6	1·8	0·9	0·9	5·8	0·6	...	0·2	1·9	...	3·1	2·6	0·2
17	1·3	0·8	0·4	5·2	3·2	...	1·7	5·8	...	...	...	2·2	...	...	1·8	1·0
18	1·0	0·5	3·7	1·6	3·2	2·3	3·4	3·4	0·6	...	1·1	0·4	...	...	3·8	0·5
19	0·6	0·1	2·8	6·8	2·1	0·3	4·3	3·0	2·3	0·3	...	...	0·6	...	2·8	0·6
20	4·3	0·2	6·2	4·4	3·0	2·7	5·4	2·4	2·7	...	0·1	0·5	0·8	2·1	0·5	1·8
21	5·6	0·5	5·7	4·9	4·0	6·2	3·8	1·8	1·0	2·2	...	...	0·9	4·4	0·3	0·4
22	3·0	1·1	5·5	6·4	7·8	2·2	2·2	3·6	2·5	1·8	...	0·1	2·3	2·7	...	2·2
23	7·0	2·8	5·6	1·8	6·4	6·8	2·6	2·8	1·4	1·7	0·4	...	2·0	3·0	1·2	0·4
0	4·8	0·9	4·7	6·3	7·6	2·6	5·5	3·0	3·1	...	0·9	...	1·1	2·3	2·9	1·6
1	7·3	2·3	8·4	5·7	5·6	4·0	5·5	2·3	4·3	0·4	0·5	1·3	2·7	0·4	2·5	1·4
2	4·6	2·1	7·5	6·3	7·4	5·5	4·3	3·9	1·0	0·1	2·1	0·1	4·1	0·4	4·6	2·5
3	1·5	1·7	6·4	7·3	8·9	5·9	3·9	2·6	0·6	2·5	...	...	1·3	2·8	4·6	1·0
4	1·5	0·6	6·5	1·9	10·9	3·2	7·1	0·5	3·3	0·2	...	...	3·2	1·1	0·6	1·5
5	1·1	0·5	3·5	3·4	9·6	3·2	3·0	2·0	2·9	1·3	0·2	...	3·0	0·2	5·8	2·6
6	0·5	0·3	6·9	2·0	6·7	1·6	4·8	1·5	3·1	0·2	1·6	0·2	2·3	0·1	4·8	0·8
7	0·3	...	9·0	2·4	4·9	0·3	3·3	3·5	0·8	...	0·7	...	4·2	2·6	0·5	0·7
8	0·2	1·3	7·7	1·2	3·9	1·7	3·2	...	4·3	...	...	...	2·2	2·5	0·1	0·2
9	6·8	...	1·1	1·5	2·3	1·7	5·2	...	0·6	2·4	1·4	...	0·9	1·4	0·2	2·7
10	0·2	0·1	2·2	1·0	5·9	0·4	3·4	0·8	3·3	...	2·5	0·9	0·3	2·0	2·8	2·1
11	2·4	1·0	1·0	3·0	3·8	...	3·6	...	1·0	2·8	1·4	2·3	0·5	0·3	4·8	0·1
Sums	54·0	17·7	104·8	87·7	124·6	54·5	80·7	56·9	44·6	19·4	18·2	14·6	36·4	36·0	55·4	29·0

with a Pressure of one-tenth of a pound or upwards upon a square foot of surface, together
sures for each Hour in 1844.

Point of the Compass at each Hour in 1844.

S.	S by W.	SSW.	SW by S.	SW.	SW by W.	WSW.	W by S.	W.	W by N.	WNW.	NW by W.	NW.	NW by N.	NNW.	N by W.	Mak. M. T.
																h.
1	...	7	8	23	9	4	6	6	3	3	2	4	3	2	1	12
5	1	8	8	23	7	11	3	8	2	3	3	3	3	...	...	13
2	4	10	5	24	7	13	3	4	3	5	1	2	3	...	...	14
2	5	9	10	26	9	3	6	6	5	2	...	8	2	2	1	15
2	4	7	8	23	8	7	7	3	4	3	2	7	2	3	...	16
3	1	13	12	24	12	10	5	4	1	...	2	4	3	3	2	17
6	3	13	10	23	5	17	4	5	1	2	...	6	4	4	1	18
4	4	13	15	25	6	13	9	7	2	3	...	7	4	4	2	19
5	5	7	20	29	15	13	7	10	4	3	...	12	4	2	3	20
4	7	14	14	29	8	7	11	9	6	9	1	13	4	4	3	21
5	5	7	15	29	10	11	6	10	9	7	4	9	3	8	10	22
2	4	19	8	33	14	10	7	9	5	6	5	18	1	7	3	23
2	8	12	15	35	9	10	6	10	7	8	3	16	3	3	4	0
5	4	10	16	31	14	17	4	6	10	8	3	12	2	6	6	1
5	5	8	14	34	13	10	8	11	7	6	6	11	1	6	5	2
4	4	9	15	36	6	10	5	13	14	3	3	8	3	5	3	3
4	3	7	14	30	7	14	7	8	7	5	3	10	4	3	5	4
5	4	10	15	29	7	8	6	6	8	6	3	5	2	10	5	5
3	1	13	9	31	8	5	7	8	4	7	2	6	1	8	7	6
4	3	9	9	26	12	8	9	9	2	4	1	7	...	5	5	7
6	2	11	5	27	5	13	6	9	2	2	1	5	1	2	4	8
6	1	14	10	25	7	7	2	9	1	1	1	4	3	2	1	9
4	2	6	5	36	6	7	6	7	...	3	1	4	3	3	4	10
1	1	12	5	26	6	15	5	6	2	4	1	6	3	5	3	11
90	81	248	264	677	210	243	145	183	108	102	48	187	62	97	78	Sums

each Point of the Compass at each Hour in 1844.

S.	S by W.	SSW.	SW by S.	SW.	SW by W.	WSW.	W by S.	W.	W by N.	WNW.	NW by W.	NW.	NW by N.	NNW.	N by W.	Mak. M. T.
lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	h.
0·1	...	4·6	4·5	16·6	3·4	3·0	4·3	3·3	0·7	5·5	4·4	1·4	1·7	0·3	0·9	12
1·8	0·3	5·3	4·9	12·1	3·8	7·9	3·2	4·2	1·7	1·2	1·3	1·5	0·6	...	...	13
0·4	1·2	3·6	1·7	18·7	2·9	7·2	2·1	5·1	3·3	4·4	0·4	2·1	0·6	...	...	14
0·6	2·0	2·6	4·8	18·9	2·7	1·8	3·0	6·8	4·6	0·4	...	3·2	2·1	0·3	0·6	15
0·2	1·3	3·1	6·6	16·0	2·5	3·6	8·8	0·3	2·5	1·4	0·2	3·1	0·2	2·0	...	16
0·4	0·1	5·0	6·4	15·9	6·5	3·3	2·9	1·1	0·3	...	2·7	2·4	1·0	0·8	1·9	17
4·1	1·5	5·4	7·0	11·1	3·6	5·3	1·4	5·2	0·2	4·0	...	2·6	1·1	1·3	0·2	18
3·4	1·4	6·8	14·2	10·3	5·5	3·9	8·7	2·8	0·8	3·9	...	3·2	1·8	0·7	1·1	19
1·6	1·5	4·4	20·0	13·3	5·1	6·2	4·0	10·0	6·6	0·8	...	4·9	2·5	0·4	0·9	20
2·5	3·0	11·1	14·2	24·6	2·9	6·2	5·4	11·2	4·1	9·6	0·4	5·5	2·6	1·1	0·6	21
2·7	2·5	5·5	13·1	29·3	5·0	6·6	6·3	8·0	10·5	4·8	3·6	5·7	1·8	2·6	3·1	22
3·3	2·2	8·4	9·4	37·0	8·6	6·6	4·9	5·0	7·1	3·7	5·9	10·5	1·5	4·9	1·3	23
2·2	4·4	10·9	14·4	27·8	10·3	8·6	6·3	12·0	9·9	8·3	4·5	11·8	1·2	0·7	4·9	0
1·9	3·2	3·9	14·1	30·6	13·6	15·4	4·2	13·9	7·8	17·8	2·2	7·4	2·0	4·7	2·7	1
2·4	2·5	2·6	13·8	38·4	7·7	6·6	7·4	4·3	10·3	11·4	13·1	9·3	0·9	7·8	4·5	2
1·9	1·9	3·2	14·1	28·2	6·0	4·9	6·2	16·9	10·2	2·6	6·6	10·2	1·6	2·2	2·1	3
4·7	1·3	2·7	12·7	21·2	3·7	16·1	10·5	3·9	6·1	5·5	4·3	8·2	3·8	0·8	3·1	4
1·0	1·5	6·1	9·0	27·0	6·3	6·6	3·3	3·7	9·4	6·7	3·2	4·4	1·1	7·8	3·3	5
1·8	0·1	8·5	3·8	22·0	3·8	3·2	3·2	11·9	2·0	6·1	0·8	2·3	0·3	6·1	3·6	6
3·0	0·7	4·8	3·5	11·7	9·6	7·5	5·2	5·8	1·1	3·8	0·5	2·4	...	4·9	0·9	7
6·4	3·5	7·1	2·1	15·5	1·5	5·9	1·4	8·2	2·1	1·3	0·1	1·8	0·7	0·4	3·3	8
3·2	0·1	7·7	5·4	13·5	2·9	2·4	1·7	11·1	0·3	0·6	0·3	1·7	1·2	1·4	1·1	9
0·5	0·9	1·4	5·2	19·8	3·0	2·8	7·2	5·9	...	1·0	0·6	1·2	0·4	1·2	4·4	10
0·1	0·3	5·7	3·8	15·6	1·6	6·4	4·6	8·8	2·8	0·8	0·1	5·0	0·4	2·5	1·8	11
50·2	37·4	130·4	208·7	495·1	122·5	148·0	116·2	169·4	104·2	105·6	55·2	111·8	31·1	54·9	46·3	Sums

Times which the Wind blew from the different Points of the Compass.—It will be observed from the sums of times, Table XXXV., that the sums are greater for each of the 16 principal points than for the points immediately preceding and succeeding; this is due to the preference given by the observer in all doubtful cases to the principal points. The wind blew oftenest in 1844 (as in 1843) from the SW. and seldomest from the SE. by E. If we take the sums of the times for the 5 points SSW. to WSW. corresponding to SW., from WSW. to WNW. corresponding to W., and so for the others of the 8 principal points, we obtain the following numbers:—

SW.	W.	NW.	N.	NE.	E.	SE.	S.
1642	781	496	494	877	323	230	572

These sums give the same result as the more limited series for 1843. The wind blew oftenest from SW.; the number of times diminishes to NNW., where it is a secondary minimum; it increases to NE., where it is a secondary maximum, and diminishes again to about SE. by E., from which the wind blew seldomest. The wind blew twice as often from SW. as from NE., and twice as often from NW. as from SE. The numbers for the points SE., NW., NE., and SW., are approximately in the ratio of 1, 2, 4, and 8. The ratio of the numbers for the same points in 1843 was as 1, 4, 8, and 16. The wind blew twice as often from the points included between N., W., and S., as from the points in the opposite semicircle; the number from the hourly observations being for the former 2823, and for the latter 1422: the same result was obtained from the observations for 1843.

Sums of Pressures with which the Wind blew from the different Points of the Compass.—The greatest sum of pressures is that for SW., and the least is that for SE. by E. The sums of pressures for each of the 5 points, including the 8 principal points as above, are as follow:—

SW.	W.	NW.	N.	NE.	E.	SE.	S.
lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
1104·7	643·4	358·6	277·7	452·3	219·8	160·6	302·4

The sums of pressures are a maximum about SW.; they diminish from thence to W., NW., and N., a secondary minimum occurring about that point; the sums increase thence to NE., where they are a secondary maximum, and diminish from NE. to SE., where the sums of pressures are least; they increase from the minimum at SE. to the maximum at SW.

Mean Pressure of the Wind, while blowing, for different Points of the Compass.—Dividing the sums of pressures, given by the above, for the 8 principal points by the number of times which the wind blew, we obtain the following as the mean pressures with which the wind blew from the different points:—

SW.	W.	NW.	N.	NE.	E.	SE.	S.
lb.	lb.	lb.	lb.	lb.	lb.	lb.	lb.
0·67	0·82	0·72	0·56	0·52	0·68	0·70	0·53

The wind, therefore, on the average, blew with the greatest force from about W. by N., and with the least force from about NE. This result is not nearly so distinct and regular as that for 1843, in which year the wind blew with the greatest force from NW., and with the least from NE.

Diurnal Variation of the Resultant Pressures of the Wind.—The resultant mean for the time during which the wind blew is a secondary minimum about $5^h\ 40^m$ A.M., a principal maximum about 1^h P.M., a principal minimum about $6^h\ 40^m$ P.M., and a secondary maximum about midnight. (See Table XXXVI.) The resultant means for the whole number of observations indicate generally the same law.

Diurnal Variation of the Direction of the Resultant Wind.—The result exhibited in the last column of Table XXXVI. was obtained from the observations for 1843, though not so distinctly. The direction of the wind is nearly W. at 2^h P.M., and it is nearly SW. after midnight. The direction of the wind is nearest W. about the time of maximum temperature, and nearest S. about the time of minimum temperature. The direction of the wind, therefore, is most westerly when its velocity is greatest, and most southerly when the velocity is least. It is extremely probable that both facts may be explained by the greater descent of the upper current when the air at the surface is most rarified, *i. e.*, at the time of maximum temperature. See remarks on the motions of the different currents, after Table XXXVII.

TABLE XXXVI.—Sums of the Pressures of Wind in Table XXXV. resolved into the four Cardinal Points of the Compass, together with the Value and Direction of the Resultant, for each hour in 1844.

Mak. M. T.	Sums of Pressures resolved in: N.	E.	S.	W.	Resultant: Sums.	Means with reference to Whole No. of Obs.	Means with reference to No. of Obs., Wind blowing.	Directions.
h.	lb.	lb.	lb.	lb.	lb.	lb.	lb.	°
12	14·6	12·3	28·8	40·8	31·8	0·10	0·26	W. 26 S.
13	12·0	16·1	31·5	36·5	28·2	0·09	0·21	W. 44 S.
14	12·8	15·5	31·5	41·4	31·9	0·10	0·25	W. 36 S.
15	15·3	17·1	30·8	39·7	27·4	0·09	0·20	W. 34 S.
16	13·4	16·4	32·1	37·9	28·5	0·09	0·23	W. 41 S.
17	17·6	15·6	31·0	34·5	23·2	0·07	0·17	W. 35 S.
18	17·4	16·5	33·1	35·4	24·6	0·08	0·17	W. 40 S.
19	20·1	17·7	40·2	45·8	34·5	0·11	0·21	W. 36 S.
20	28·6	22·1	44·1	58·8	39·8	0·13	0·20	W. 23 S.
21	36·0	24·7	55·4	73·8	52·8	0·17	0·26	W. 22 S.
22	39·4	26·6	54·9	79·4	55·0	0·18	0·25	W. 16 S.
23	46·7	26·1	61·5	83·7	59·5	0·19	0·26	W. 14 S.
0	47·0	28·5	65·8	98·9	72·9	0·23	0·31	W. 15 S.
1	54·1	31·2	63·1	109·5	78·8	0·25	0·33	W. 7 S.
2	62·1	32·9	65·0	102·9	70·1	0·22	0·30	W. 2 S.
3	46·1	31·9	53·8	89·0	57·6	0·18	0·25	W. 8 S.
4	40·4	28·1	49·7	79·1	51·8	0·16	0·24	W. 10 S.
5	38·3	26·9	52·0	70·3	45·5	0·14	0·21	W. 18 S.
6	30·6	24·4	40·1	55·3	32·3	0·10	0·16	W. 17 S.
7	25·4	20·8	35·2	46·7	27·7	0·09	0·16	W. 21 S.
8	21·4	18·4	36·5	37·8	24·6	0·08	6·17	W. 38 S.
9	18·6	15·3	32·8	36·5	25·5	0·08	0·18	W. 34 S.
10	16·2	18·9	33·3	39·5	26·8	0·09	0·19	W. 40 S.
11	19·7	17·6	31·6	44·5	29·4	0·09	0·20	W. 24 S.

The resultant means are obtained in the manner already described, Table XXXIV.

TABLE XXXVII.—Differences of the Directions of Motions of the Lower and Upper Currents of Air, as deduced from the Comparisons of the Direction of the Wind and the Motions of the Clouds.

Currents.	Quadrant N. to E.: No. of Results.	Mean Diffs. of Motion.	Mean Result.	Quadrant E. to S.: No. of Results.	Mean Diffs. of Motion.	Mean Result.	Quadrant S. to W.: No. of Results.	Mean Diffs. of Motion.	Mean Result.	Quadrant W. to N.: No. of Results.	Mean Diffs. of Motion.	Mean Result.
		°	°		°	°		°	°		°	°
Scud *minus* Wind.	57	+24		14	+30		150	+25		47	+21	
	34	−34	+ 2	5	−14	+16	10	−11	+21	14	−18	+12
	3	0		2	0		7	0		4	0	
Cir.-str. *minus* Wind.	28	+42		12	+34		103	+37		33	+22	
	10	−60	+14	2	−17	+25	13	−21	+30	13	−31	+ 7
	2	0		1	0		3	0		3	0	
Cir.-str. *minus* Scud.	14	+41		7	+22		62	+27		41	+25	
	17	−37	− 2	2	− 5	+11	13	−17	+17	27	−30	+25
	6	0		4	0		12	0		12	0	
Cirrus *minus* Wind.	2	+60		5	+63		58	+47		14	+31	
	6	−43	−17	0	0	+63	6	−11	+40	4	−40	+12
	0	0		0	0		3	0		4	0	
Cirrus *minus* Scud.	4	+34		3	+30		29	+39		28	+31	
	9	−44	−20	0	0	+30	9	−27	+20	8	−30	+14
	0	0		0	0		6	0		10	0	

The scud current includes the cumulus. The directions of the motions of the clouds were obtained in the manner described in the Introduction, and it is believed with more accuracy than the direction of the surface current.

Table XXXVII. has been formed from the observations of the motions of the clouds and surface wind given in the Tables, pages 172–308, in the following manner:—When several observations of the direction of the wind have been obtained, at successive hours, with simultaneous observations of the direction of motion of the current of scud, the mean direction of the wind has been taken, and the mean direction of the cloud motion, the direction of the lower current (counted in points from N. by E., S., and W.) has been subtracted from the direction of the upper current, and the difference entered with its proper sign as one result; when the lower current is from an easterly point the difference is positive if the upper current be most southerly; when the lower current is from a westerly point the difference is positive when the upper current is most northerly. When in the same day the direction of either current has changed considerably, two or more results have been obtained; in several cases, especially for the higher currents, a single good comparison has received the value of a result: on the average, each result (the whole number of which is given in the first column for each quadrant, Table XXXVII.) for the differences scud *minus* wind has been obtained from five pairs of simultaneous observations, for the differences cirro-stratus *minus* wind and cirro-stratus *minus* scud from three pairs, and for the differences cirrus *minus* wind and cirrus *minus* scud from two pairs of simultaneous observations. All observations for the direction of the surface wind were rejected for which the force was less than 0·1 lb., or for which the pressures of 0·1 lb. were, from variable gusts, due to local causes. All the results for the lower current in the quadrant N. to E., which were positive, were combined, and the mean difference obtained, similarly for the negative differences; and so for the other quadrants. Thus, for the difference of motions scud *minus* wind in the quadrant N. to E., 57 results were obtained which gave positive differences, the mean difference being $+24^\circ$; 34 were obtained which gave negative differences, the mean being -34°, and there were 3 results without any difference of motion. The mean of the whole 94 results shews that the scud moved from a point 2° south of that from which the surface current proceeded.

Differences of the Directions of Motion of the Upper and Lower Currents of Air.—In the three quadrants E. to S., S. to W., and W. to N., the mean direction of the superior current is always *positive* of the mean direction of the inferior current, and this is true in all the five series of comparisons. In the quadrant S. to W., in which the greatest number of observations were obtained, the law is very distinct. The scud current proceeds on the average (of about 800 comparisons of the motions of the two currents) from a point 21° north of that from which the surface wind proceeds; the cirro-stratous current (on an average of about 300 comparisons) proceeds from a point 30° north of the surface wind; and the cirrous current proceeds (on an average of about 200 comparisons) from a point 40° north of the direction of the surface wind. From these results we might conclude that the cirro-stratous current is $30^\circ - 21^\circ = 9^\circ$ positive of the scud current, and that the cirrous current is $40^\circ - 21^\circ = 19^\circ$ positive of the scud current; the quantities actually obtained from comparisons which are more or less *independent* are $+17^\circ$ and $+20^\circ$ respectively, the former differing somewhat in value, though accurate as regards sign. Such consistency is only to be expected where the differences of motion have been determined from a sufficient number of comparisons. The results, however, for the quadrant E. to S. are nearly as consistent, though obtained from few observations. In this quadrant the scud is 16° positive of the surface current, and the cirro-stratous is 25° positive of the surface current, whence the cirro-stratous should be $25^\circ - 16^\circ = 9^\circ$ positive of the scud current; the result from comparisons which are partially or wholly independent is $+11^\circ$. The comparisons in the quadrant W. to N. indicate on the average in all cases that the upper current is positive of the lower, but the differences do not increase regularly with the height of the current. The quadrant N. to E. contains the only exception to the law of the other quadrants; in this quadrant the cirrous current is not positive of the inferior currents; the comparisons, however, are very few. The scud and cirro-stratous currents are both positive of the surface current, the former not much, probably because the scud current from the NE. is generally very low.

Taking the averages for all the quadrants, we have

Scud current *minus* surface current,	from 347 results,	(about 1700 comparisons)	$= +13^\circ.9$
Cirro-stratous current *minus* surface current,	... 223	(... 700 ....)	$= +21^\circ{\cdot}7$
Cirrous current *minus* surface current,	... 102	(... 200 ....)	$= +31^\circ{\cdot}9$
Cirro-stratous current *minus* scud current,	... 217	(... 700 ....)	$= +16^\circ.4$
Cirrous current *minus* scud current,	... 106	(... 200 ....)	$= +12^\circ{\cdot}8$

Roughly, then, the direction of the scud current is about 1 point, of the cirro-stratous current about 2 points, and of the cirrous current about 3 points, of the compass, positive of the direction of the surface current.

It happens frequently that comparisons of the motions of two currents are obtained when the other two do not exist, or are not evident, from the absence of clouds within them, or from the masses of clouds in the lower current. It is for these reasons that each of the comparisons of motions above are obtained from observations made partly at the same and partly at different times; they are therefore to a considerable extent independent

of each other; if this had not been the case, the difference of motion cirro-stratus *minus* scud would have been the same when obtained from the several individual comparisons and from the final differences. The mean difference of the motions of the cirro-stratus *minus* scud from the individual comparisons $=+16^\circ\cdot4$, but obtained from the two final results (cirro-stratus *minus* surface), *minus* (scud *minus* surface), it is $=21^\circ\cdot7-13^\circ\cdot9=+7^\circ\cdot8$; similarly the difference cirrus *minus* scud from the individual comparisons $=+12^\circ\cdot8$, but obtained from the results (cirrus *minus* surface), *minus* (scud *minus* surface), it is $=31^\circ\cdot9-13^\circ\cdot9=+18^\circ\cdot0$. The difference of the results by the two methods is evidently due to the different observations from which they are obtained; the law of sign is unaffected, the amount only is different. If we take the mean of the results for the comparisons of the three upper currents with the surface current, we find that

672 results give the mean upper current *minus* the surface current, $=+19^\circ\cdot0$

Similarly, if we combine the means for the comparisons of the cirrous and cirro-stratous currents with the scud current, we find that

323 results give the mean cirro-stratous and cirrous current *minus* the scud current, $=+15^\circ\cdot2$

If we now examine the relative motions of the mean of the three upper currents, and of the surface current in each quadrant, we obtain the following results:—

Quadrant	N. to E.,	142	results, mean upper current *minus* surface current,	$=+\ 4^\circ\cdot3$
....	E. to S.,	41	......	$=+25^\circ\cdot0$
....	S. to W.	353	......	$=+27^\circ\cdot6$
....	W. to N.,	136	......	$=+10^\circ\cdot2$

The mean upper current is therefore least positive of the surface current in the quadrant N. to E., and most positive in the quadrant S. to W.

If we compare in a similar manner the mean cirro-stratous and cirrous current with the scud current in each quadrant, we have

Quadrant	N. to E.,	50	results, mean cirro-stratous and cirrous current *minus* scud current,	$=-\ 6^\circ\cdot7$
....	E. to S.,	16	......	$=+14^\circ\cdot6$
....	S. to W.,	131	......	$=+18^\circ\cdot0$
....	W. to N.,	126	......	$=+21^\circ\cdot0$

In the quadrant N. to E. the mean of the highest two currents is negative of the scud current. This is the only case where such difference is found; the upper current is most positive of the lower current in the quadrant W. to N.

It appears, then, that the mean upper current always proceeds from a point positive of the direction of the surface current, and that the motion of the mean highest current, with reference to the scud current, follows the same law, with one exception. This result is in accordance with the conclusions from the causes of the oblique motions of the aërial currents. Currents of air proceeding northwards from more southerly positions, retain a portion of the eastward velocity of the places from which they start; hence the south-easterly winds become more southerly, and the south winds become more south-westerly as they proceed northwards, the extent of the change of direction depending on the greater or less rapidity with which they lose their excess of eastward velocity, and acquire that of the more northerly latitudes over which they move. This loss of eastward velocity will depend upon the proximity of the aërial stratum to the surface of the earth, and therefore the lower currents of air will lose more of their eastward velocity than the higher currents, and the upper current of southerly winds will become more westerly than the lower currents. If, in considering the currents of air which proceed southwards from more northerly latitudes, we remember that the lower currents, from their proximity to the surface of the earth, acquire the greater eastward velocity of the lower latitudes more quickly than the upper currents, it will be evident that the lower current from the north-west will become less northerly than the upper current, and that the lower current from the north will become less easterly than the upper current. There appears to be an exception in the latter case: the highest current of air proceeds from a point less easterly than the middle current. It is believed that this anomaly is due to the following cause;—it frequently happens that when the lower current of scud is from a north-easterly point there is an upper current of cirrus or cirro-stratus from a north-westerly point: these two currents cannot have had the same origin, and therefore the explanation of the differences of motions given above cannot apply.

EXTENT OF CLOUDED SKY.

TABLE XXXVIII.—Daily, Weekly, and Monthly Means of the Estimated Extent of Clouded Sky, the whole Sky covered being 10, for 1844.

Civil Day.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
1	3·2	5·2	6·5	2·3	1·1	8·8	7·9	9·7	[4·2]	8·5	8·9	[8·6]
2	3·6	9·3	2·9	9·9	4·3	[8·9]	8·7	6·3	0·4	5·0	9·6	9·9
3	9·4	5·2	[5·8]	10·0	5·3	6·9	8·7	6·0	5·6	5·3	[9·6]	9·4
4	10·0	[5·9]	6·7	9·0	10·0	8·0	7·6	[8·3]	6·0	7·8	9·9	3·6
5	9·6	6·3	3·3	7·6	[6·5]	10·0	10·0	8·8	8·8	6·8	9·3	3·3
6	8·3	3·3	5·4	4·2	7·2	8·3	9·0	9·5	10·0	[6·7]	10·0	2·4
7	[8·7]	6·2	7·6	[6·4]	7·0	9·9	[8·5]	9·7	9·5	1·7	7·4	3·8
8	9·6	6·2	10·0	7·3	5·2	6·9	6·0	8·8	[7·4]	8·9	9·6	[6·5]
9	9·5	7·6	6·9	9·2	6·7	[7·2]	9·4	7·7	6·8	10·0	9·7	9·5
10	5·5	3·7	[6·4]	1·4	9·3	4·5	8·8	6·5	4·9	6·8	[8·7]	10·0
11	4·5	[6·9]	6·3	4·1	10·0	6·6	6·5	[8·1]	4·5	5·0	6·2	10·0
12	8·1	7·9	4·2	7·3	[7·7]	7·0	8·3	7·8	4·7	7·2	9·4	10·0
13	2·1	6·2	3·7	7·9	7·6	7·2	8·2	9·6	8·1	[7·2]	9·8	8·1
14	[4·5]	10·0	7·6	[7·0]	8·7	7·9	[6·6]	8·5	10·0	7·3	8·0	9·8
15	2·1	7·0	10·0	9·5	3·9	6·3	5·6	9·8	[7·2]	8·4	7·9	[9·6]
16	5·2	3·4	8·5	5·5	5·7	[8·3]	3·6	8·6	3·8	8·3	8·6	10·0
17	5·1	9·2	[7·9]	7·5	7·3	8·6	7·5	8·8	9·4	8·1	[7·8]	10·0
18	4·3	[5·6]	7·4	7·4	5·8	10·0	9·9	[8·3]	7·5	7·6	7·9	10·0
19	7·6	8·5	7·7	9·2	[6·1]	9·7	9·2	5·9	7·9	4·5	9·5	4·9
20	6·7	1·1	6·4	9·8	6·5	6·1	5·7	6·7	6·0	[4·9]	4·8	1·8
21	[5·4]	4·5	4·4	[7·4]	8·3	8·6	[7·1]	9·8	5·6	3·6	2·6	8·3
22	6·4	2·3	9·2	6·9	2·8	7·0	4·3	10·0	[6·8]	2·3	5·6	[7·5]
23	5·4	6·0	8·4	7·9	3·9	[8·3]	4·3	9·3	8·9	3·5	8·7	9·9
24	2·3	9·9	[7·3]	3·5	6·1	8·4	9·3	4·8	6·0	5·6	[6·5]	10·0
25	6·6	[6·9]	8·7	9·5	5·7	10·0	8·8	[6·2]	6·6	9·9	5·4	10·0
26	3·0	9·2	6·6	5·5	[6·7]	9·7	9·9	6·8	9·4	9·3	7·0	10·0
27	9·8	6·5	6·5	4·6	5·4	9·2	8·3	3·2	6·2	[8·6]	10·0	8·9
28	[5·6]	7·6	3·5	[3·8]	9·3	8·3	[8·8]	2·9	9·1	8·4	10·0	9·5
29	6·1	10·0	5·2	1·1	10·0	9·1	6·8	0·2	[7·7]	8·5	9·0	[8·2]
30	4·7		0·3	0·8	9·6	[8·6]	9·1	5·9	8·0	10·0	9·5	8·5
31	3·5		[5·2]		10·0		10·0	7·1		9·9		5·4
Mean	6·01	6·50	6·30	6·50	6·77	8·12	7·83	7·36	6·95	6·97	8·24	6·96

Annual Variation of the extent of Clouded Sky.—The sky was least clouded in January, and most clouded in November and June. The means for the meteorological quarters are as follow:—

Winter.	Dec., Jan., Feb.,	6·49.	Summer.	June, July, Aug.,	7·77.
Spring.	March, April, May,	6·52.	Autumn.	Sept., Oct., Nov.,	7·39.

Year 1844, = 7·04.

The extent of clouded sky was greatest in summer, and least in winter, of 1844.

In the year 1844, on the average of the whole year, seven-tenths of the whole sky was clouded; the mean for the year 1843 (= 6·89) gives nearly the same result.

The extremes of the daily mean extent of sky clouded are as follow:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
No. of days overcast,	1	2	2	1	4	3	2	1	2	2	3	9
Least daily mean,	2·1	1·1	0·3	0·8	1·1	4·5	3·6	0·2	0·4	1·7	2·6	1·8

In December 1844, there were nine days during which no sky was visible. There was no day in 1844 in which clouds were not observed, the least observed being upon August 29, during which, on an average, one-fiftieth of the sky was covered by clouds.

TABLE XXXIX.—Mean Extent of Clouded Sky, with reference to the Moon's Age and Declination, in 1844.

Moon's Age.	Extent of Clouded Sky.	Moon's Age.	Extent of Clouded Sky.	After Moon farthest North.	Extent of Clouded Sky.	After Moon farthest North.	Extent of Clouded Sky.
Day.		Day.		Day.		Day.	
15	6·92	0	7·14	0	7·38	14	7·88
16	7·69	1	7·47	1	7·64	15	7·32
17	8·12	2	7·57	2	8·23	16	7·12
18	7·19	3	7·87	3	6·93	17	6·90
19	7·59	4	7·04	4	6·99	18	7·52
20	7·63	5	6·83	5	6·18	19	7·28
21	7·33	6	7·52	6	7·61	20	7·19
22	7·41	7	6·99	7	6·45	21	6·49
23	7·67	8	7·66	8	6·25	22	6·24
24	6·63	9	7·45	9	7·21	23	6·19
25	6·32	10	5·88	10	6·65	24	6·88
26	7·29	11	6·16	11	6·22	25	7·79
27	7·17	12	5·68	12	7·12	26	7·48
28	6·62	13	6·10	13	8·19	27	7·52
29	6·87	14	6·87				

Table XXXIX. has been formed from Table XXXVIII. in the manner described for Table II. of the magnetical results.

Sky clouded with reference to the Moon's Age.—The means of groups are as follow:—

12 days till	18 days, Full Moon,......	6·94		27 days till	3 days, New Moon,......	7·24
15	22 ...	7·48		0	7 ...	7·30
19	26 ...	7·23		4	11 ...	6·94
23	29 ...	6·94		8	14 ...	6·54

These quantities indicate, that the sky was most clouded a few days after full moon and after new moon, and least clouded a few days before full moon, and less clouded a few days before new moon than after it.

Sky clouded with reference to the Moon's Declination.—The means of groups are—

25 days till	3 days, Moon farthest North,	7·57		11 days till	17 days, Moon farthest South,	7·25
0	6 ...	7·28		14	20 ...	7·32
4	10 ...	6·76		18	24 ...	6·83
7	13 ...	6·87		21	27 ...	6·94

From these means, the sky was most clouded when the moon was farthest north and south, and least clouded at the intermediate periods. This result only agrees with that for 1843, in having a maximum when the moon was farthest south. In order to obtain any connection between the age or position of the moon and extent of clouded sky, it will probably be desirable to consider only those observations made between 6^h P.M. and 6^h A.M.

TABLE XL.—Hourly Means of the Estimated Extent of Clouded Sky for each Month in 1844.

Mak. M. T.	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
h 12	5·3	6·0	6·1	6·0	5·7	7·8	6·5	7·4	6·2	6·1	7·7	8·4	6·60
13	6·0	5·7	6·3	6·5	6·2	7·3	7·0	7·7	5·7	6·3	7·9	7·7	6·69
14	5·5	5·8	6·3	5·7	6·4	7·5	7·5	7·3	5·7	5·7	8·1	7·8	6·61
15	5·2	5·7	5·2	6·0	6·7	7·4	7·7	7·4	6·0	6·6	8·1	7·7	6·64
16	4·5	5·3	4·8	6·1	7·1	7·1	7·6	7·4	6·5	6·4	7·9	8·2	6·57
17	5·0	5·7	5·2	6·5	7·2	7·5	7·3	7·5	7·1	6·4	8·5	8·2	6·84
18	5·2	6·9	5·9	6·2	7·4	7·8	7·7	7·7	7·4	7·2	8·5	8·2	7·17
19	6·0	7·1	6·5	6·8	7·7	7·9	8·2	7·4	7·8	7·2	8·5	8·4	7·46
20	6·6	6·8	6·2	6·7	7·9	8·8	8·5	7·1	7·5	7·8	9·2	9·0	7·67
21	6·4	7·4	6·3	6·9	7·5	8·7	9·0	7·2	7·4	7·7	9·2	8·9	7·72
22	6·0	7·2	6·8	6·8	7·4	8·7	8·7	7·8	7·6	7·4	9·3	8·8	7·71
23	5·9	6·9	6·8	7·0	7·4	8·7	8·8	7·9	7·2	8·0	8·9	8·2	7·64
0	6·2	6·6	7·6	6·8	7·3	8·4	8·7	7·5	7·5	7·9	8·9	7·8	7·60
1	6·0	6·9	7·0	7·4	6·6	8·0	8·8	7·7	7·4	7·9	9·1	7·8	7·55
2	7·0	7·1	7·3	6·6	6·4	8·1	8·5	7·9	7·3	7·8	8·8	7·9	7·56
3	7·2	7·2	7·0	6·7	6·5	8·5	8·7	7·9	7·3	7·3	8·5	8·0	7·57
4	7·4	7·1	7·1	6·6	6·4	8·6	7·7	7·7	7·4	7·4	8·4	7·5	7·44
5	6·7	7·8	6·5	6·7	6·6	8·6	7·5	7·5	7·2	7·6	7·8	7·4	7·32
6	6·1	7·0	6·4	6·7	5·7	8·6	7·5	7·6	7·8	6·9	7·8	7·1	7·10
7	6·3	6·7	6·3	6·6	6·4	8·6	7·7	7·1	7·6	6·3	8·1	7·2	7·07
8	6·2	5·9	5·5	6·8	6·4	7·9	7·2	6·6	6·2	6·2	7·4	7·1	6·62
9	6·1	5·8	6·1	6·0	6·6	8·3	6·9	6·9	6·7	5·7	7·0	8·1	6·68
10	5·5	5·5	5·9	5·5	6·7	8·3	7·1	6·0	6·3	6·2	6·5	8·0	6·46
11	5·9	5·8	6·4	6·3	6·0	8·0	7·4	6·3	6·0	6·9	7·7	7·7	6·70

TABLE XLI.—Hourly Means of the Estimated Extent of Clouded Sky for each of the Astronomical Quarters, and for the Year 1844.

Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.	Mak. M. T.	Nov. Dec. Jan.	Feb. March April.	May June July.	Aug. Sept. Oct.	Year 1844.
h. 12	7·1	6·0	6·7	6·6	6·60	h. 0	7·6	7·0	8·1	7·6	7·60
13	7·2	6·2	6·8	6·6	6·69	1	7·6	7·1	7·8	7·7	7·55
14	7·1	5·9	7·1	6·2	6·61	2	7·9	7·0	7·7	7·7	7·56
15	7·0	5·6	7·3	6·7	6·64	3	7·9	7·0	7·9	7·5	7·57
16	6·9	5·4	7·3	6·8	6·57	4	7·8	6·9	7·6	7·5	7·44
17	7·2	5·8	7·3	7·0	6·84	5	7·3	7·0	7·6	7·4	7·32
18	7·3	6·3	7·6	7·4	7·17	6	7·0	6·7	7·3	7·4	7·10
19	7·6	6·8	7·9	7·5	7·46	7	7·2	6·5	7·6	7·0	7·07
20	8·3	6·6	8·4	7·5	7·67	8	6·9	6·1	7·2	6·3	6·62
21	8·2	6·9	8·4	7·4	7·72	9	7·1	6·0	7·3	6·4	6·68
22	8·0	6·9	8·3	7·6	7·71	10	6·7	5·6	7·4	6·2	6·46
23	7·7	6·9	8·3	7·7	7·64	11	7·1	6·2	7·1	6·4	6·70

Diurnal Variation of the extent of Clouded Sky.—The maximum amount of clouded sky occurs generally two or three hours before noon, and minima about two hours before midnight and three or four hours

after it. The epochs of maxima and minima from Table XLI. for the year, and for each of the astronomical quarters (for which November, December, and January, constitute winter), are as follow:—

Winter,	+Max. $8^h\ 10^m$ A.M.	Min. $0^h\ 30^m$ P.M. Max. $2^h\ 40^m$ P.M.	Min. $10^h\ 10^m$ P.M. Max. $1^h\ 10^m$ A.M.	Min. $4^h\ 10^m$ A.M.
Spring,	...... $1^h\ 10^m$ P.M.		Min. $10^h\ 10^m$ P.M. Max. $12^h\ 10^m$ A.M.	Min. $4^h\ 10^m$ A.M.
Summer,	...... $8^h\ 40^m$ A.M.			Min. $12^h\ 10^m$ A.M.
Autumn,	..... $1^h\ 10^m$ P.M.		Min. $10^h\ 10^m$ P.M. Max. $12^h\ 40^m$ A.M.	Min. $2^h\ 10^m$ A.M.
Year,	...... $9^h\ 40^m$ A.M.		Min. $10^h\ 10^m$ P.M. Max. $1^h\ 10^m$ A.M.	Min. $4^h\ 10^m$ A.M.

In winter and summer, the principal maximum of the extent of clouded sky occurred about $8^h\ 30^m$ A.M.; in spring and autumn, about $1^h\ 10^m$ P.M. In winter, spring, and autumn, there are nearly equal minima about 10^h P.M. and 2^h to 4^h A.M., with a secondary but indistinctly-marked maximum between. In winter, there is a secondary minimum about noon, with a secondary maximum about $2^h\ 40^m$ P.M.

In the mean for the year, the sky was most clouded about $9^h\ 40^m$ A.M., and least clouded from 8^h P.M. till 4^h A.M.

The Ranges of the Hourly Means for each Month are as follow:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
2·9	2·5	2·8	1·9	2·2	1·7	2·5	1·9	2·1	2·3	2·8	1·9

The ranges are, on the whole, least for the summer months, and greatest for the winter months. The ranges of the hourly means for the astronomical quarters and year are—

Winter,... 1·6. Spring,... 1·5. Summer,... 1·7. Autumn,... 1·5. Year 1844,... 1·3

So that, when the hourly means for three months are considered, the variation of the extent of clouded sky during the day is nearly the same for each quarter of the year.

QUANTITY OF RAIN.

TABLE XLII.—Quantity of Rain for each Month for 1844, by the Observatory, Garden, and Greenhouse Gauges.

Month.	Observatory Gauge.	Garden Gauge.	Greenhouse Gauge.
	in.	in.	in.
January	1·904	1·70	1·26
February	2·081	1·97	1·38
March	1·632	1·65	0·98
April	0·681	0·56	0·43
May	0·546	0·38	0·38
June	3·083	2·86	2·75
July	2·553	2·51	2·17
August	1·511	1·50	1·22
September	3·104	2·96	2·61
October	1·541	1·29	1·04
November	2·780	2·77	2·27
December	0·363	0·68	0·43
Sums	21·779	20·83	16·92

The funnel-mouth of the observatory rain-gauge is 8 inches above the soil; that of the garden-gauge, $6\frac{1}{2}$ feet above the soil, and that of the greenhouse-gauge is 18 feet from the ground. The observatory-gauge is 218 feet, the greenhouse-gauge is 192 feet, and the garden-gauge is 171 feet, above the level of the sea.

Annual Variation of the Fall of Rain.—The greatest monthly falls of rain in 1844 were those for September and June; by the observatory-gauge, 3·104 in. and 3·083 in. respectively: the least monthly falls were those for December, May, and April, being by the same gauge 0·363 in., 0·546 in., and 0·681 in. respectively. The sums for each of the meteorological quarters by the observatory-gauge are—

		in.			in.
Winter.	Dec., Jan., Feb.,.........	4·348.	Summer.	June, July, Aug.,.........	7·147.
Spring.	March, April, May,......	2·859.	Autumn.	Sept., Oct., Nov., ...	7·425.

Year 1844,......... 21·779 in.

The least amount of rain fell in the spring, and the greatest amount in autumn. The average fall of rain, for one day in 1844 = 0·060 in.

The greatest Falls of Rain, within 24 hours, for each Month, as obtained from the readings of the observatory-gauge at noon, are as follow:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
0·535	0·525	0·420	0·187	0·336	0·766	0·517	0·293	0·939	0·513	0·696	0·088

The greatest fall of rain for an astronomical day, in the year 1844, occurred September 14, and was = 0·939 in.

The numbers of days in each month of 1844, in which more than one-thousandth, one-hundredth, and one-tenth of an inch of rain was found in the observatory-gauge, are as follow:—

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
0·001......	19	23	16	15	12	19	20	16	18	25	18	12
0·010......	14	22	15	8	4	13	18	15	11	14	13	8
0·100......	6	7	5	1	1	7	7	7	6	4	7	0

The greatest number of rainy days occurred in February and in October. In 1844, more than one-thousandth of an inch fell on 213 days, or on 58 days in 100; more than one-hundredth of an inch fell on 155 days, or on 42 days in 100; and more than one-tenth of an inch fell on 58 days, or on 16 days in 100.

In dividing the amount of rain for each month by the number of days on which it rained 0·001 inch, we obtain the following means:—

Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.	in.
0·100	0·090	0·102	0·045	0·045	0·162	0·128	0·094	0·172	0·062	0·154	0·030

The numbers of days on which more than 0·001 inch of rain fell, together with the mean daily falls for each meteorological quarter, and for the year, are as follow:—

		in.			in.
Winter.	No. of days, 54.	Mean fall, 0·081.	Summer.	No. of days, 55.	Mean fall, 0·130.
Spring.	.... 43.	.... 0·066.	Autumn.	.... 61.	.... 0·122.

The year 1844,...... No. of days, 213. Mean fall, 0·102 in.

The mean fall was least when the number of rainy days was least, and, on the whole, greatest when the number of rainy days was greatest.

TABLE XLIII.—Quantity of Rain with reference to the Moon's Age.

Moon's Age.	Greenhouse Gauge, 1837—1842.	Observatory Gauge, 1842—1848.	Moon's Age.	Greenhouse Gauge, 1837—1842.	Observatory Gauge, 1842—1848.
Day.	in.	in.	Day.	in.	in.
15	3·10	4·31	0	2·27	5·17
16	3·60	4·57	1	4·75	6·18
17	3·94	3·87	2	4·07	8·83
18	3·99	6·09	3	2·52	5·82
19	3·68	5·25	4	2·30	6·65
20	2·99	5·08	5	3·06	5·44
21	3·59	4·41	6	3·05	3·07
22	3·87	6·22	7	5·02	7·46
23	1·86	6·41	8	3·41	8·14
24	2·86	5·66	9	4·02	3·78
25	3·17	5·33	10	3·65	5·61
26	3·71	5·31	11	3·66	5·35
27	5·16	3·27	12	2·62	5·11
28	4·49	4·47	13	3·81	2·69
29	3·40	5·35	14	5·28	3·12

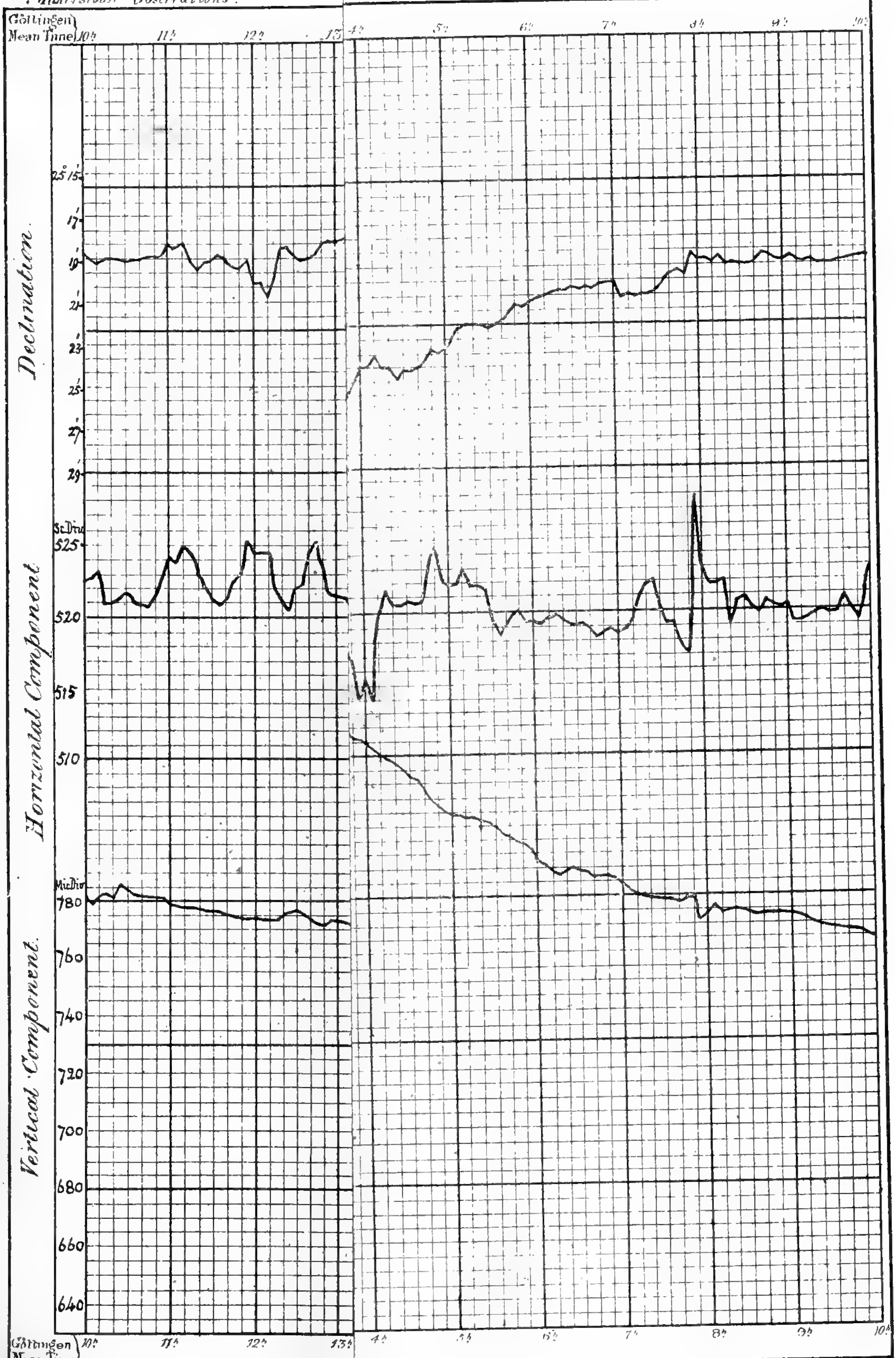
The results for the greenhouse-gauge are deduced from observations from March 6, 1837, till April 9 1842, including 62 lunations. The results for the observatory-gauge are deduced from observations from July 7, 1842, till July 28, 1848, including 75 lunations.

Amount of Rain with reference to the Moon's Age.—The following are the means of groups for each of the gauges, and for both, giving the amount of rain fallen for 100 days in each group:—

Period.	Greenhouse.	Observatory.	Both.	Period.	Greenhouse.	Observatory.	Both.
	in.	in.	in.		in.	in.	in.
12 days till 18,	6·06	5·67	5·85	27 days till 3 days,	6·15	7·44	6·85
15 22,	5·79	6·64	6·26	0 7	5·46	8·11	6·91
19 26,	5·20	7·28	6·34	4 11	5·68	7·59	6·72
23 29,	5·68	6·81	6·30	8 14	6·10	6·44	6·28

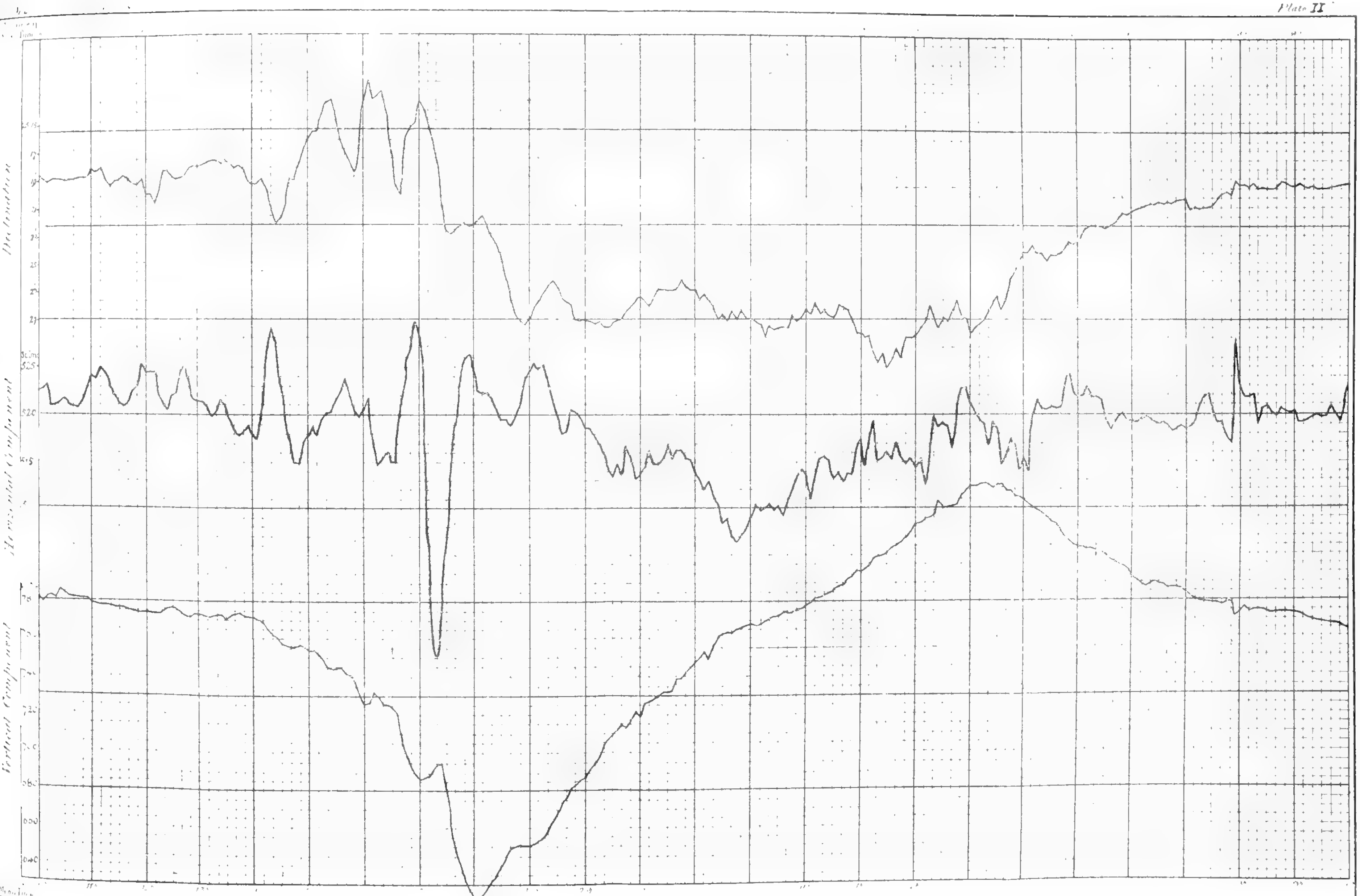
The results for the two gauges differ. By the greenhouse-gauge, the greatest amounts of rain fell when the moon was both new and full, and the least fell at the quadratures. It is right to state, that much confidence could not be placed in any result from this gauge, since it is sheltered from NE. winds by neighbouring trees, and its position upon the ridge of the greenhouse-roof seems to unfit it for even relatively accurate determinations; as the summations were made for this gauge, it has not been considered proper to withhold them. By the observatory-gauge, the greatest amount of rain fell about three days after new moon, and the least fell at full moon; the same result is obtained from the sums for both gauges. The result for the observatory-gauge is very distinctly marked.

PRINTED BY NEILL AND COMPANY, EDINBURGH.

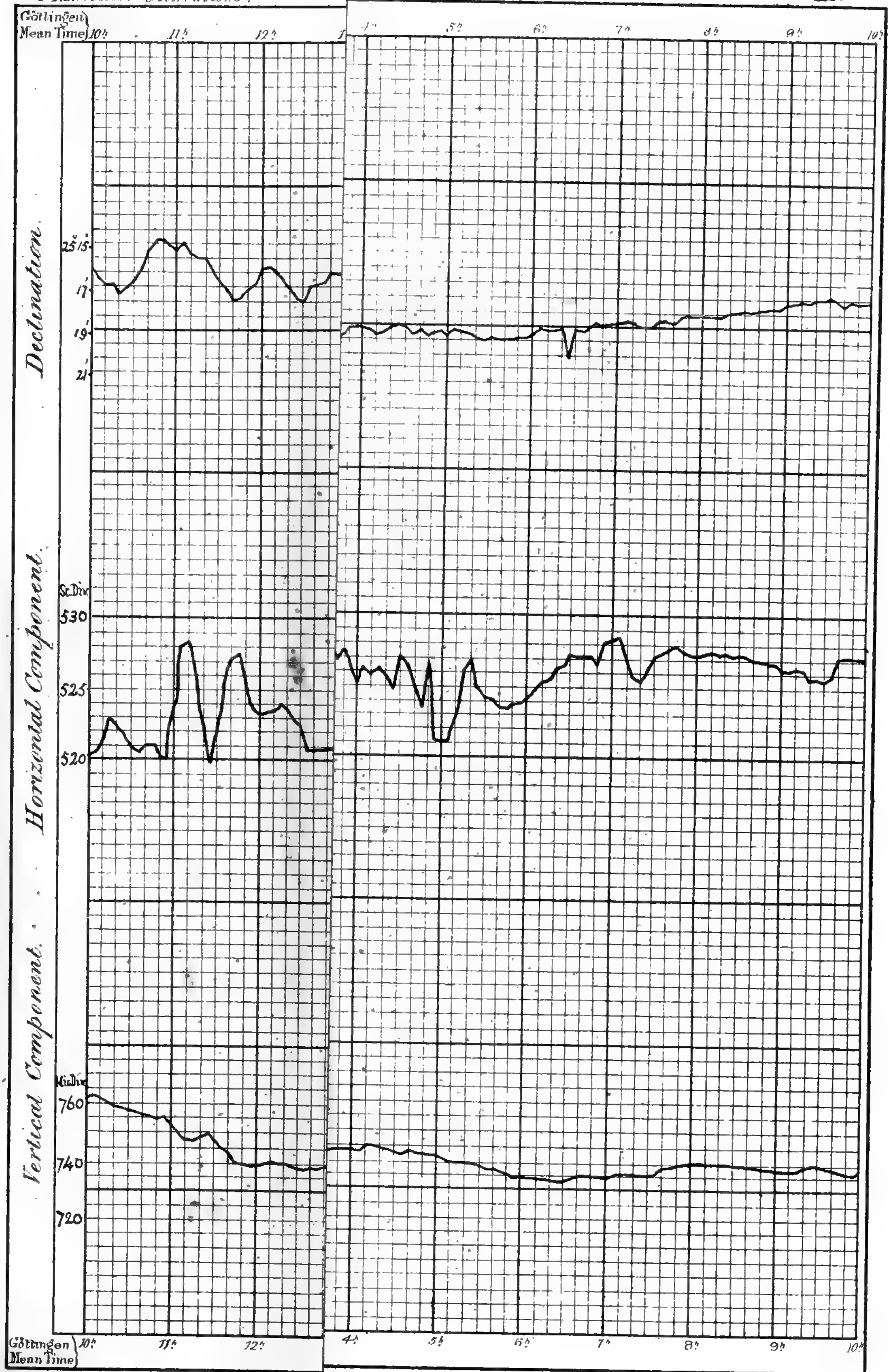

Göttingen Mean Time
10h
11h
12h
13h
4h
5h
6h
7h
8h
9h
10h
Declination.
25° 15'
17'
19'
21'
23'
25'
27'
29'
Horizontal Component
Sc. Div.
525
520
515
510
Vertical Component.
Mic. Div.
780
760
740
720
700
680
660
640
Göttingen Mean Time

Term-Day Magnetical Observations. January 24, 25. 1844.

Plate II.

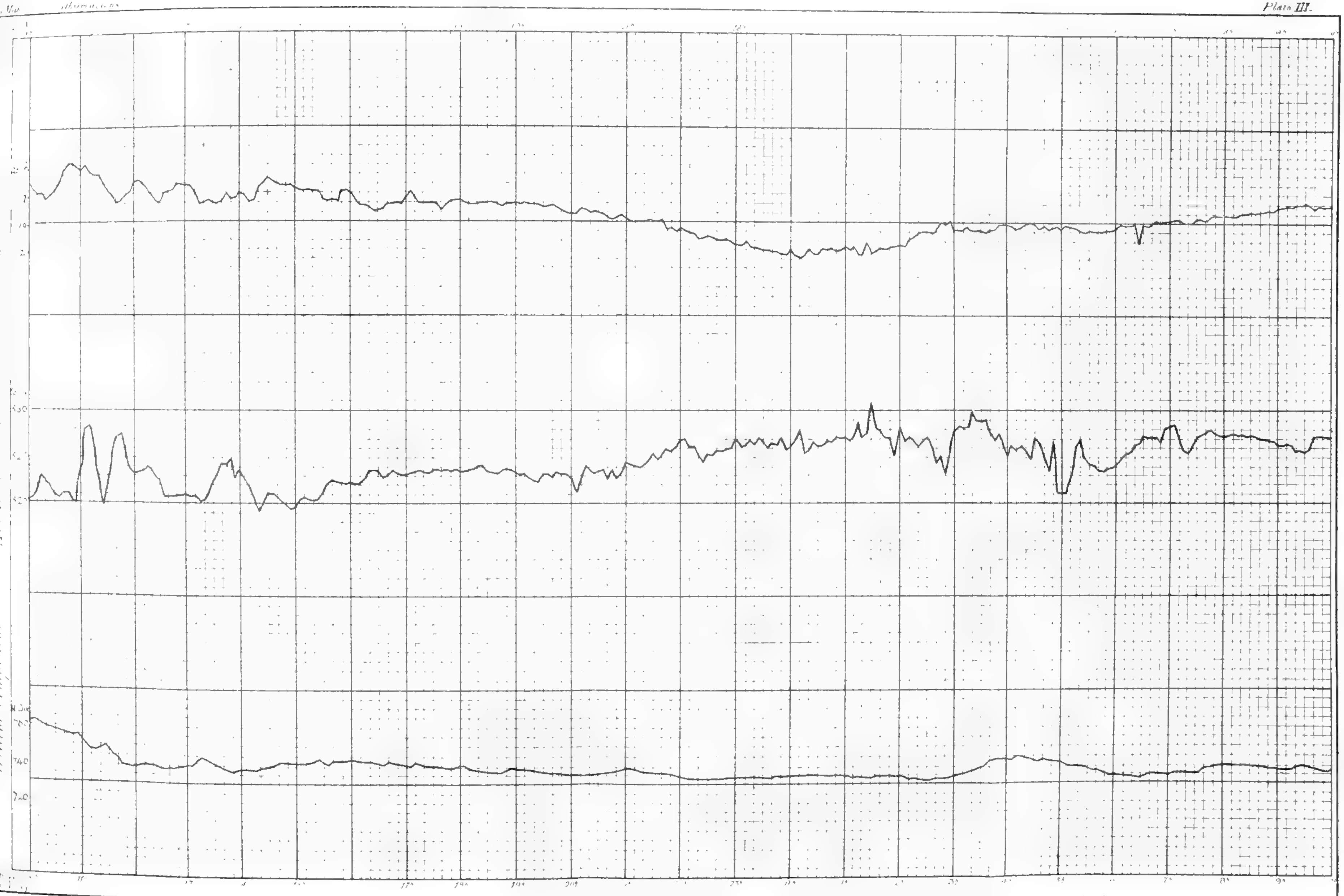


Ascending Curves indicate decreasing westerly declination and increasing force


Göttingen Mean Time
10h
11h
12h
4h
5h
6h
7h
8h
9h
10h
Declination.
25°15'
17'
19'
21'
Horizontal Component.
Sc. Div.
530
525
520
Vertical Component.
Mic. Div.
760
740
720
Göttingen Mean Time

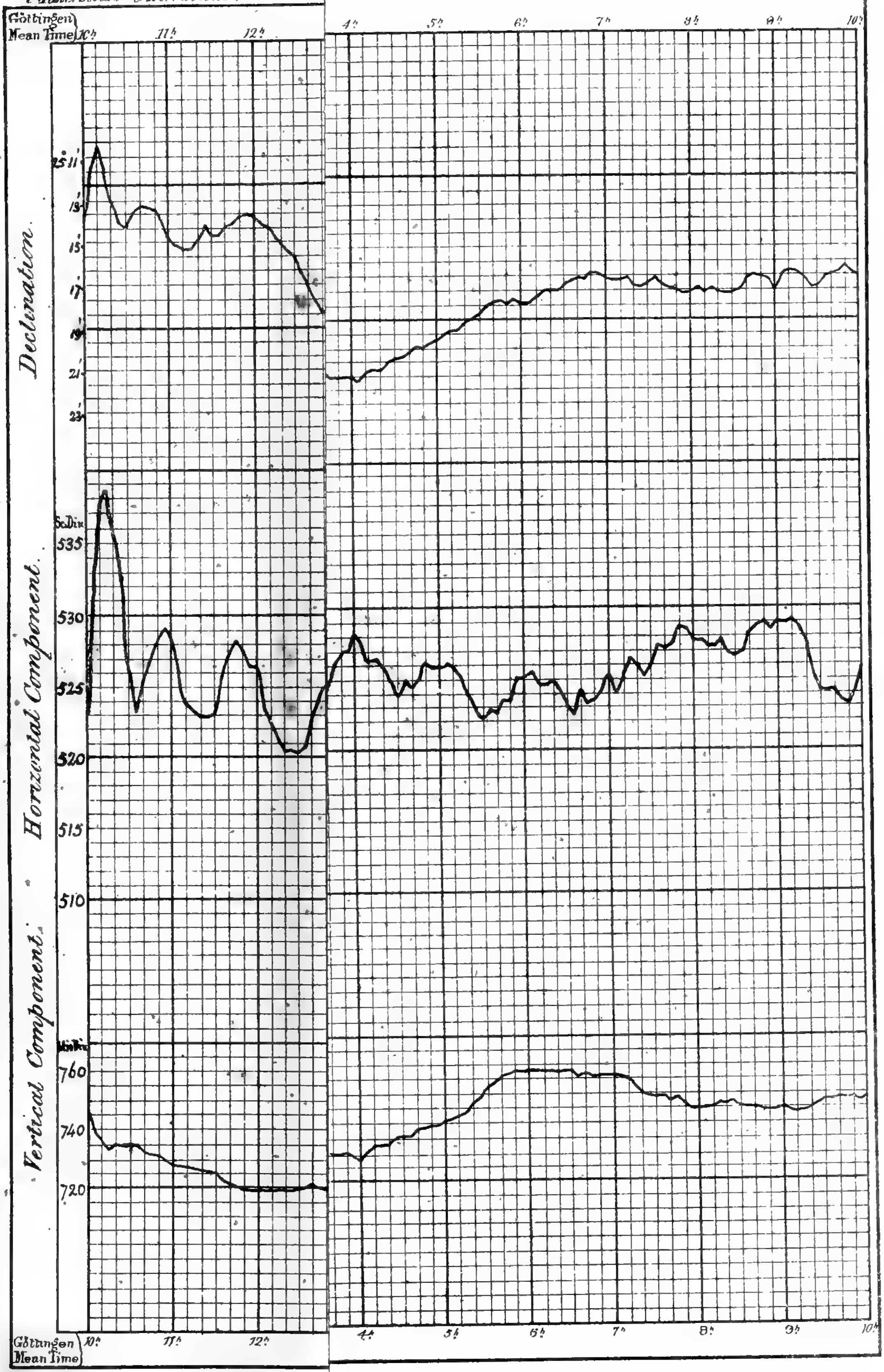
Term-Day Magnetical Observations: February 23, 24. 1844.

Plate III.

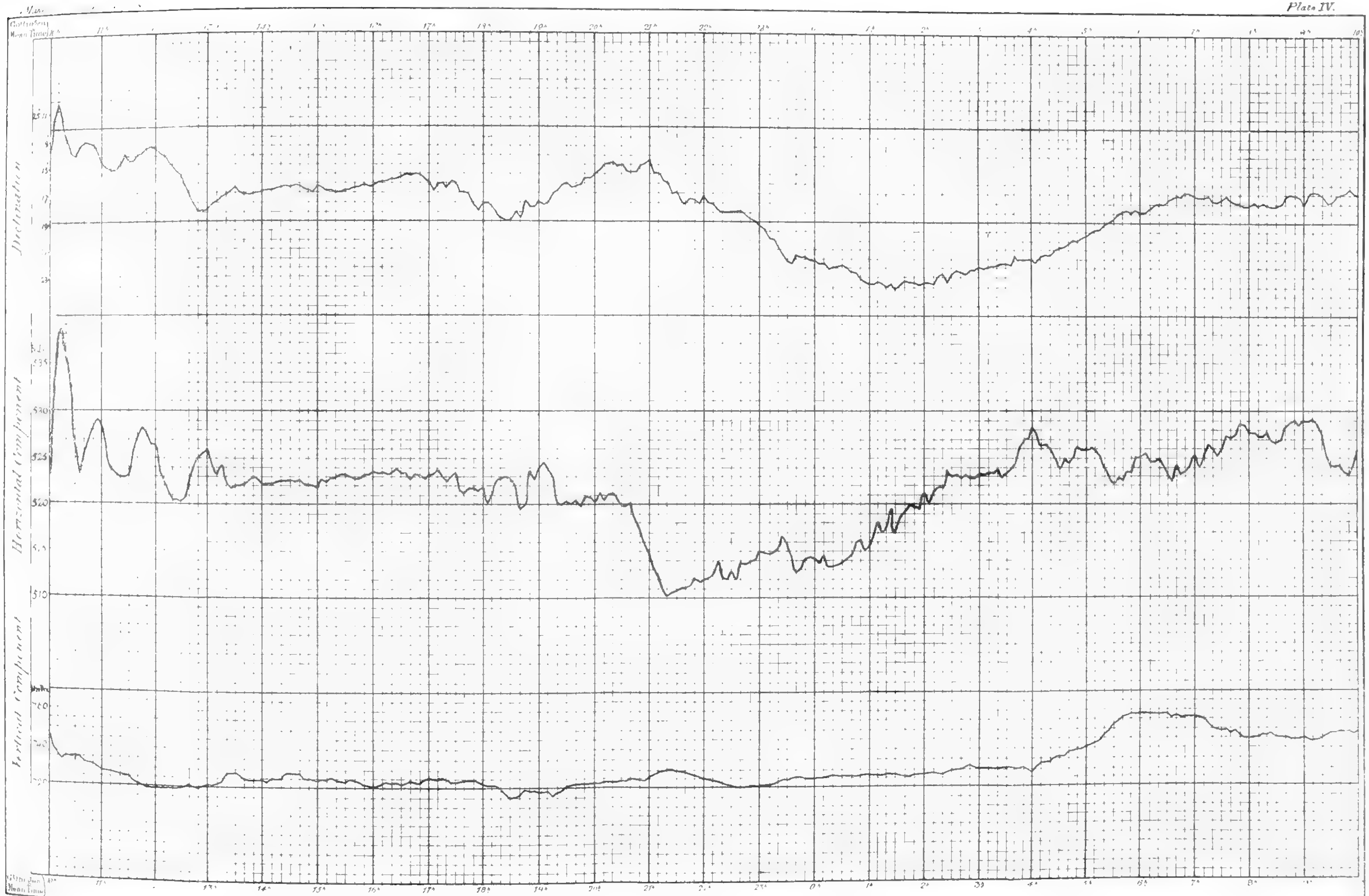


Ascending Curves indicate decreasing westerly declination and increasing force

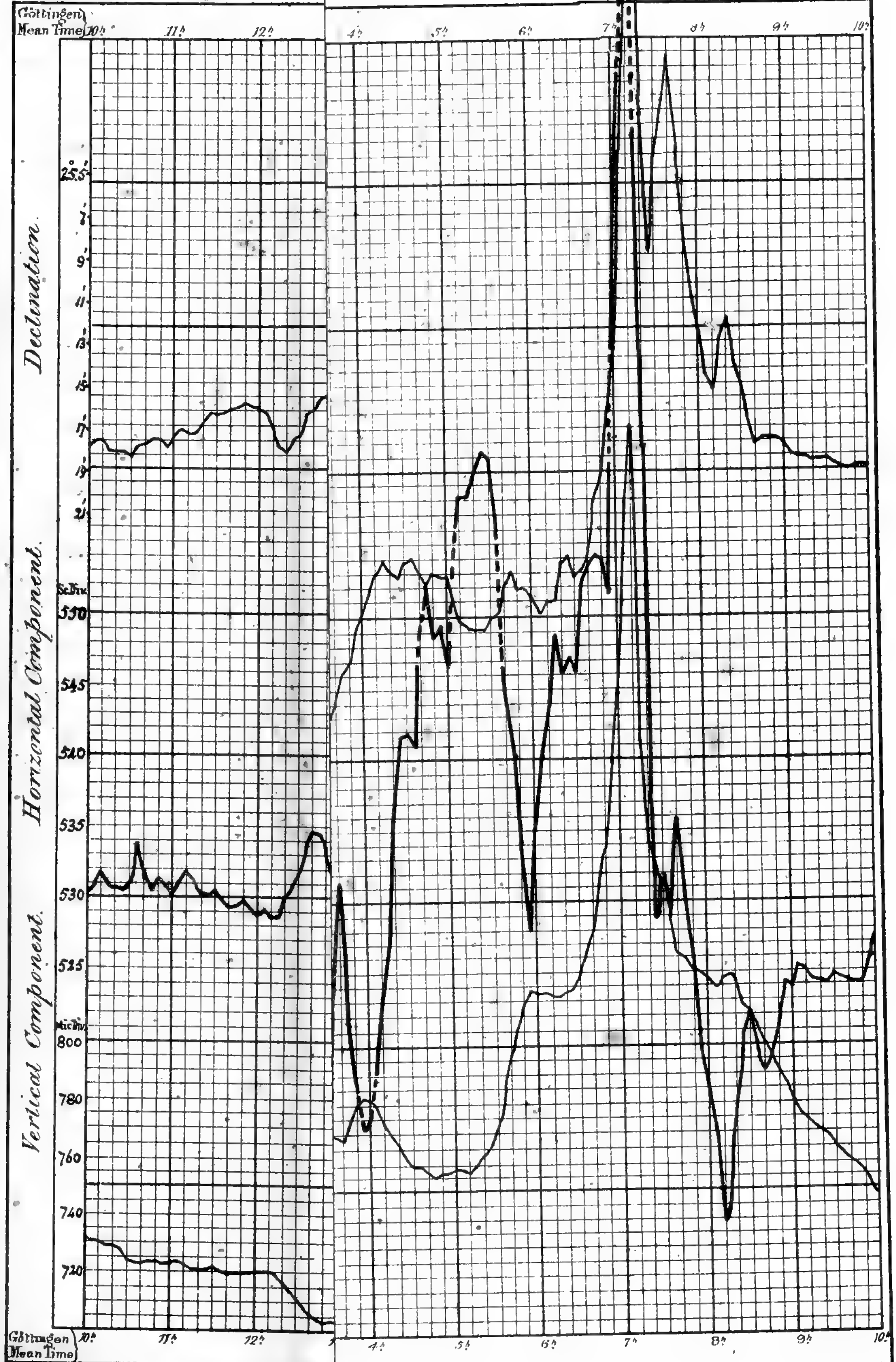
Makerstoun Observations.



Term-Day Magnetical Observations. March 20, 21. 1844.

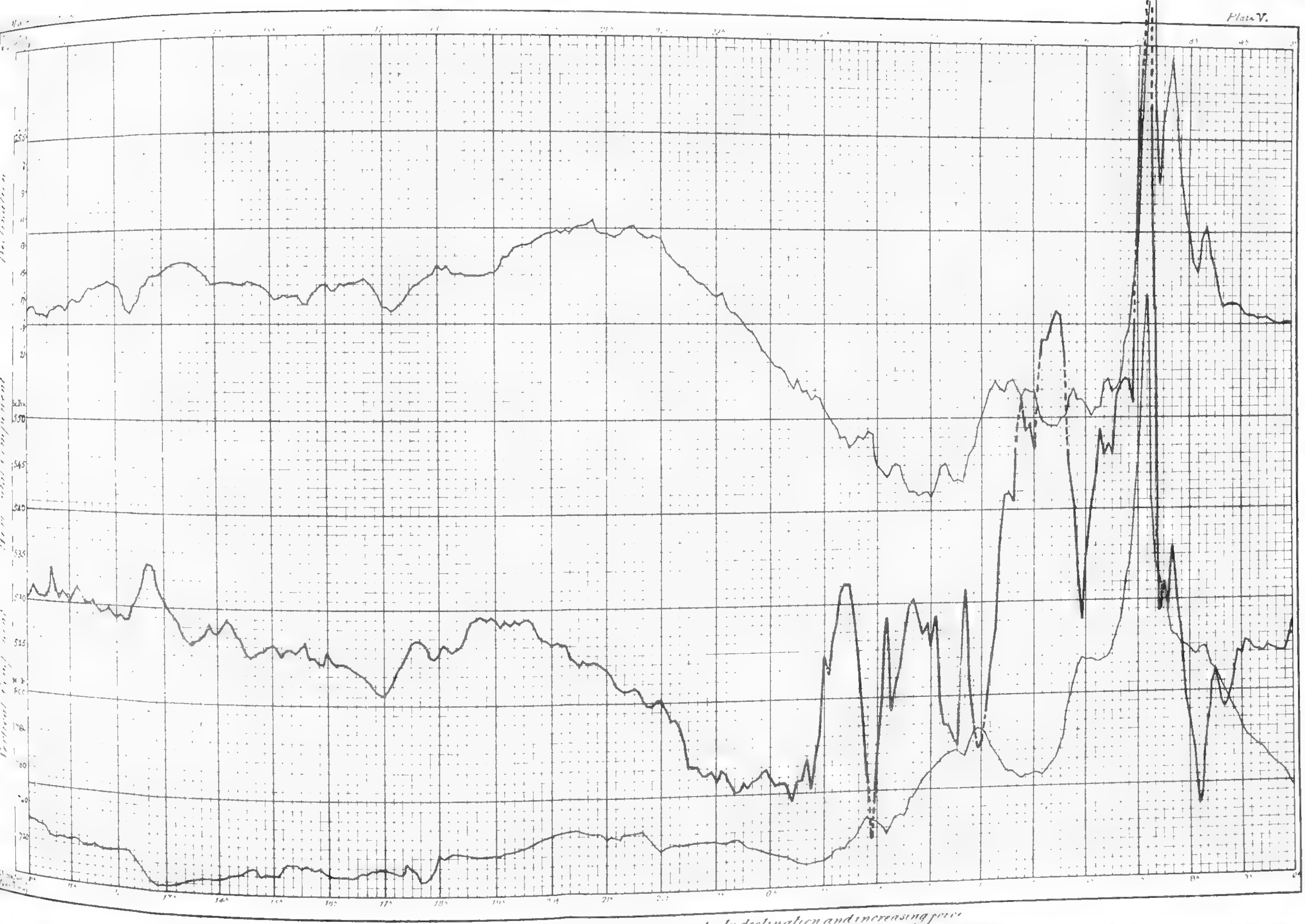


Ascending Curves indicate decreasing westerly declination and increasing force

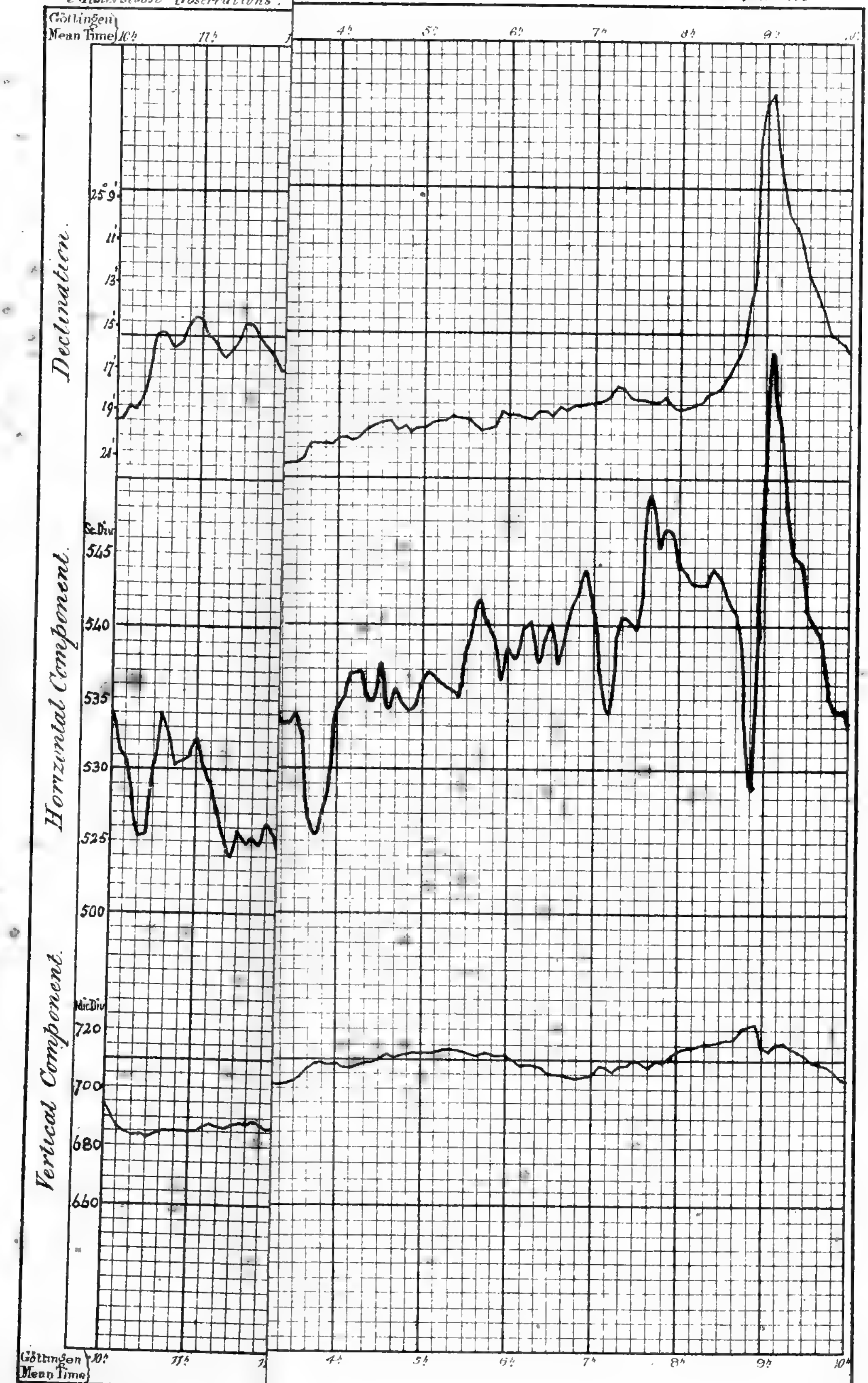

Göttingen Mean Time
10h
11h
12h
4h
5h
6h
7h
8h
9h
10h
Declination.
25.5°
7'
9'
11'
13'
15'
17'
19'
21'
Horizontal Component.
Sc.Div.
550
545
540
535
530
525
Vertical Component.
Mic.Div.
800
780
760
740
720
Göttingen Mean Time

Term-Day Magnetical Observations. April 24, 25: 1844.

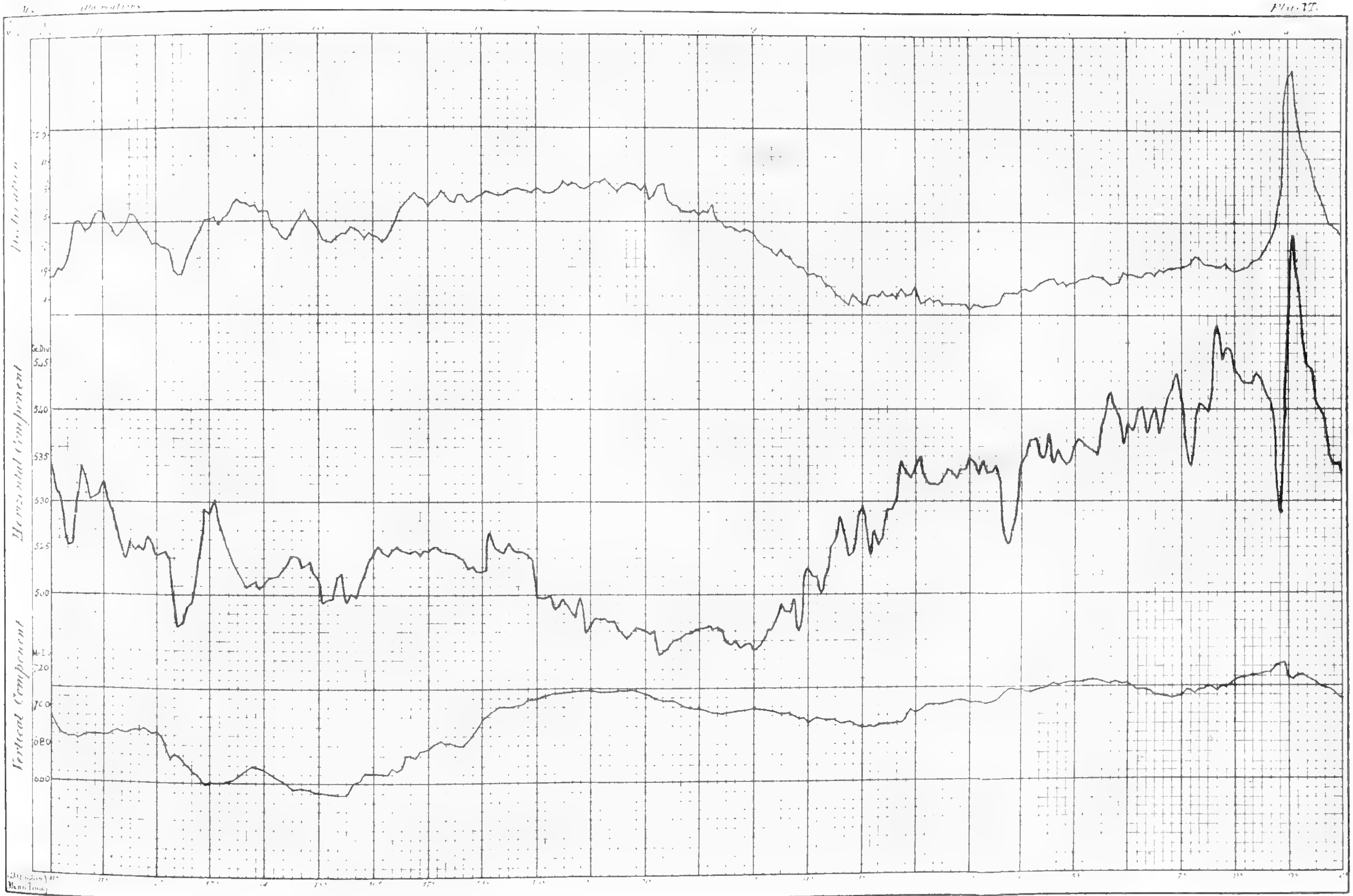
Plate V.



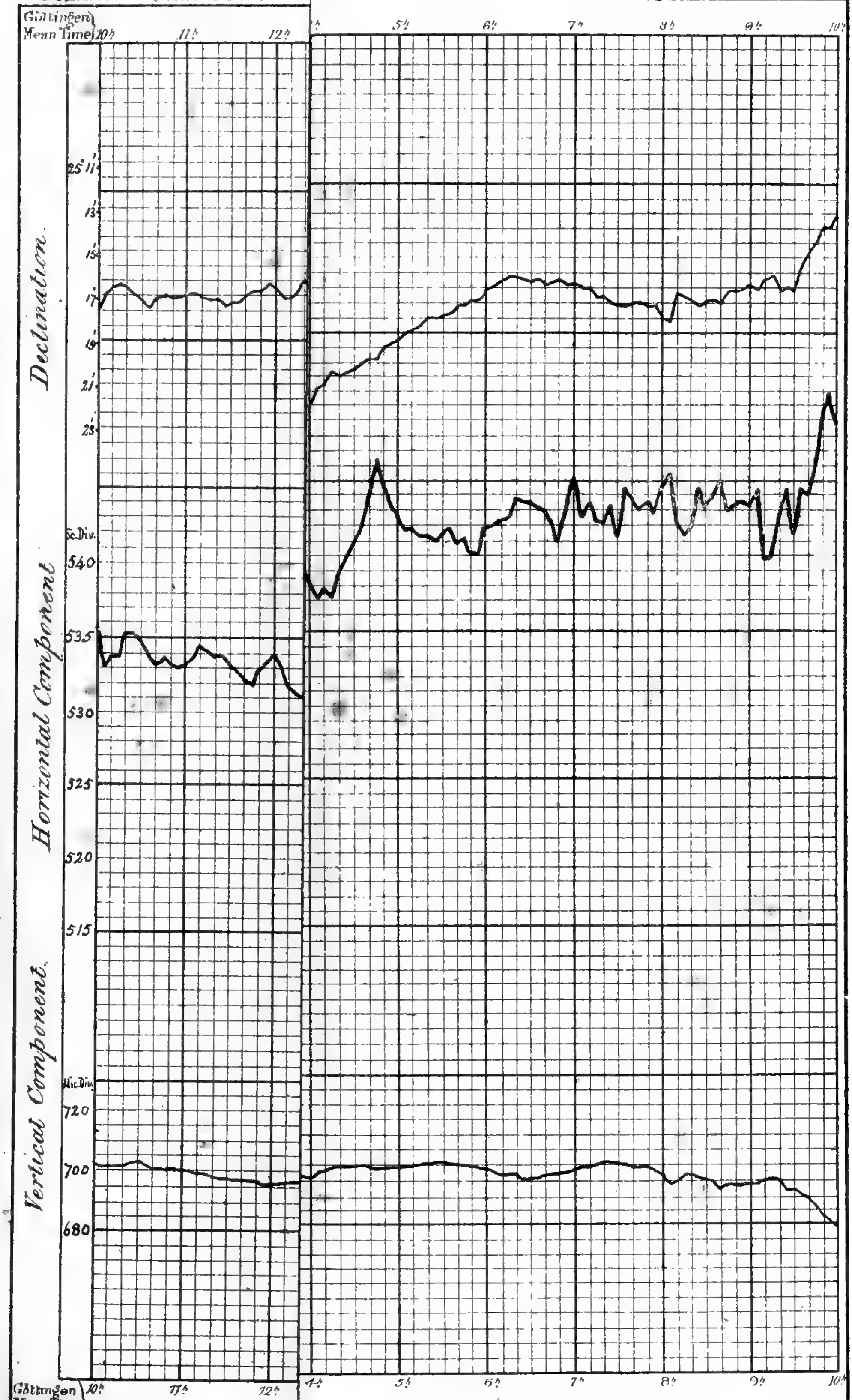
Ascending Curves indicate decreasing westerly declination and increasing force


Göttingen Mean Time
10h
11h
4h
5h
6h
7h
8h
9h
10h
Declination.
25° 9'
11'
13'
15'
17'
19'
21'
Horizontal Component.
Sc. Div.
545
540
535
530
525
500
Vertical Component.
Mic. Div.
720
700
680
660

Term-Day Magnetical Observations. May 24, 25: 1844.

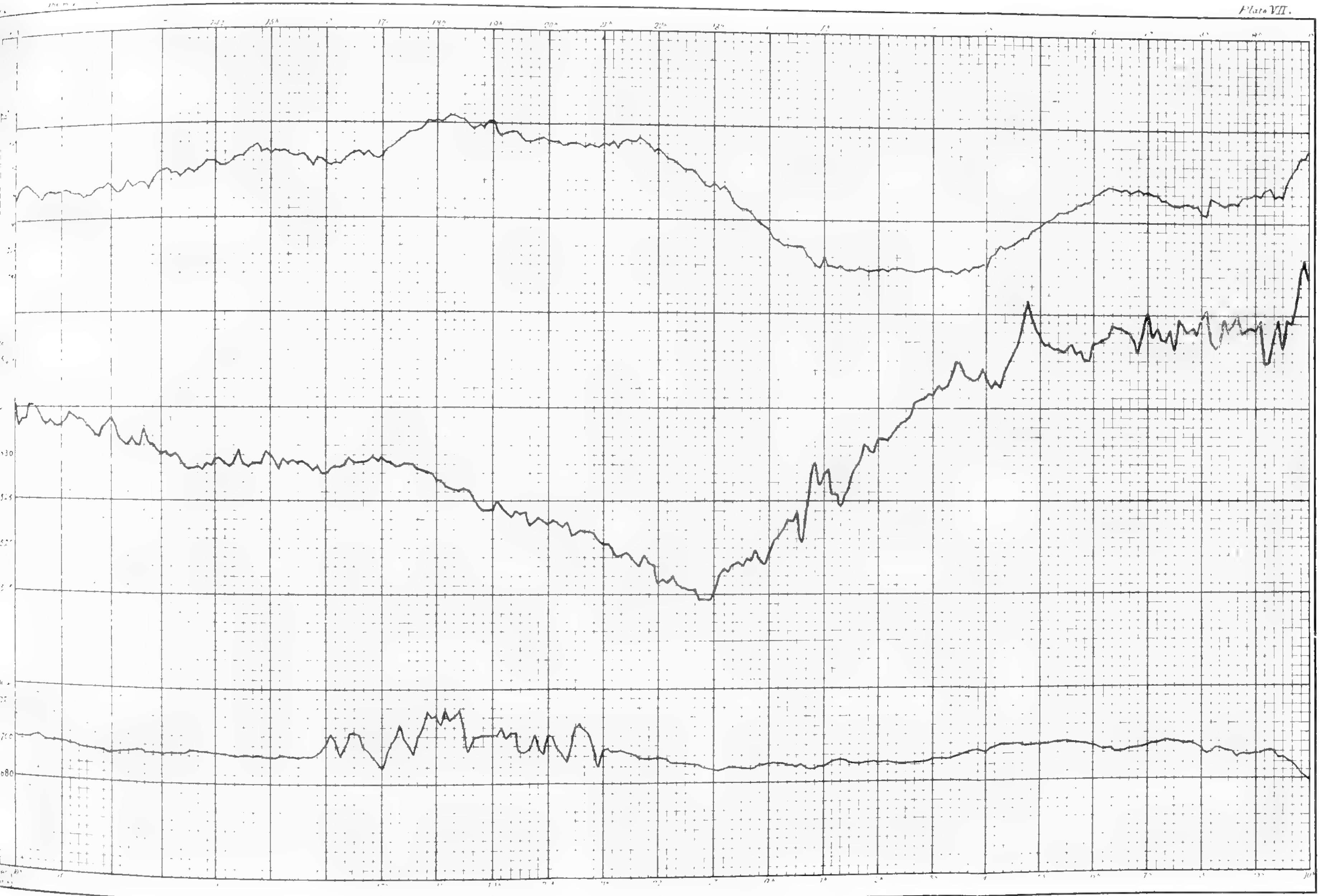


Ascending Curves indicate decreasing westerly declination and increasing force

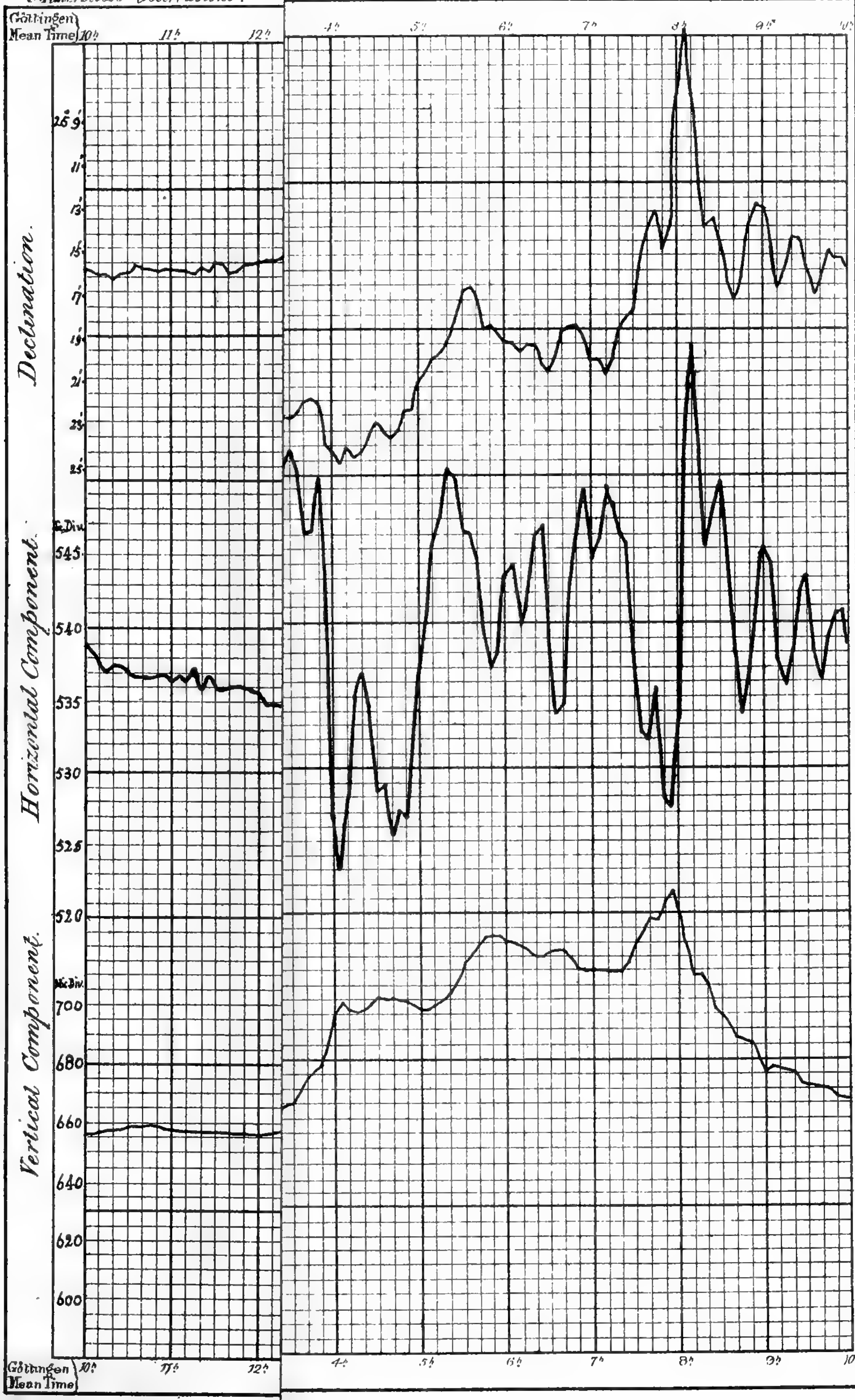

Göttingen Mean Time
10h
11h
12h
4h
5h
6h
7h
8h
9h
10h
Declination.
25° 11'
13'
15'
17'
19'
21'
23'
Horizontal Component
Sc.Div.
540
535
530
525
520
515
Vertical Component.
Mic.Div.
720
700
680
Göttingen Mean Time

Term-Day Magnetical Observations. June 19, 20: 1844.

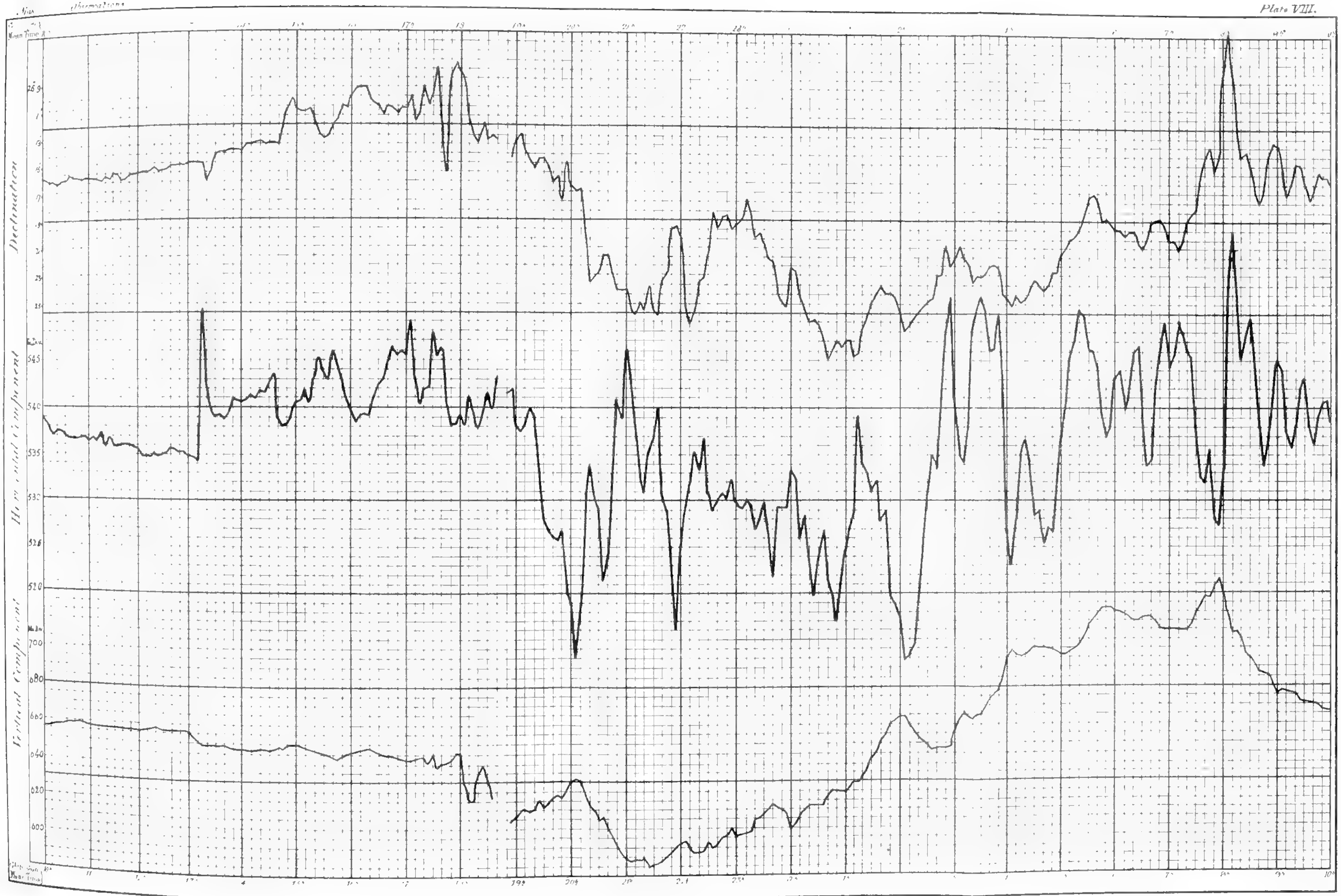
Plate VII.



Ascending Curves indicate decreasing westerly declination and increasing force


Göttingen Mean Time
10h
11h
12h
4h
5h
6h
7h
8h
9h
10h
Declination.
25° 9'
11'
13'
15'
17'
19'
21'
23'
25'
Horizontal Component.
Sc. Div.
545
540
535
530
525
520
Vertical Component.
Sc. Div.
700
680
660
640
620
600
Göttingen Mean Time
10h
11h
12h
4h
5h
6h
7h
8h
9h
10h

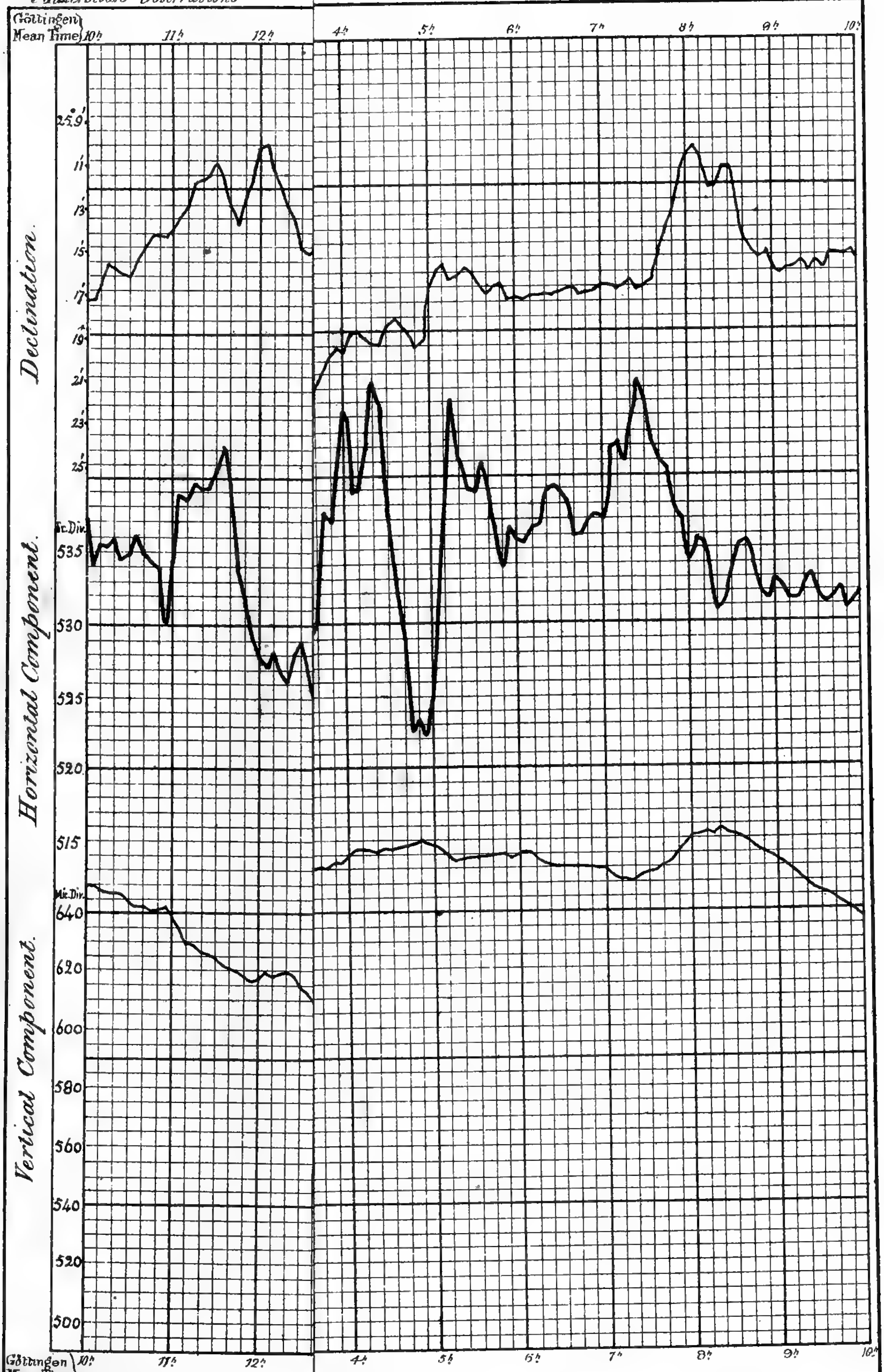
Term-Day Magnetical Observations. July 24, 25: 1844.



Ascending Curves indicate decreasing westerly declination and increasing force

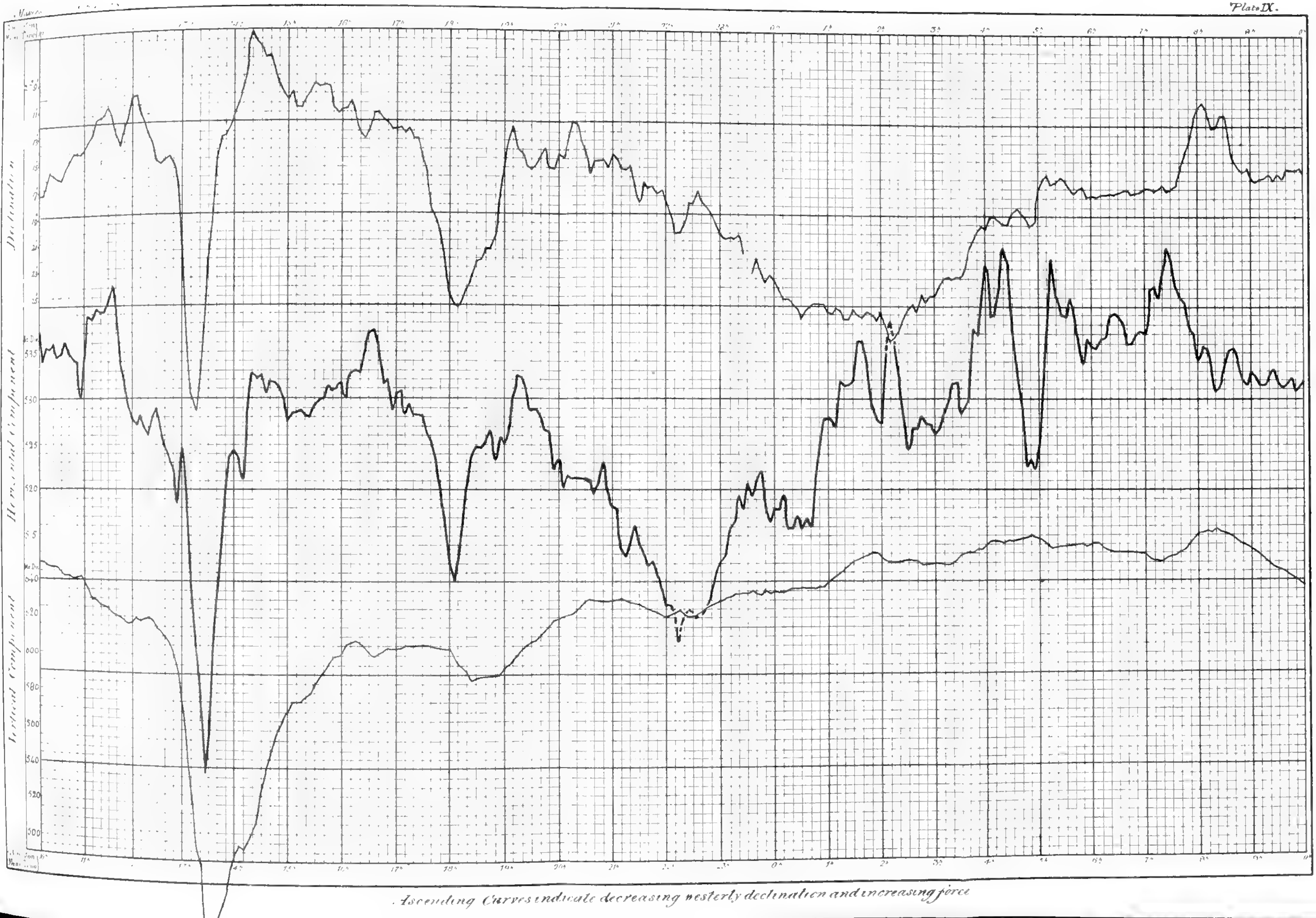
Makerstoun Observations

Plate IX.

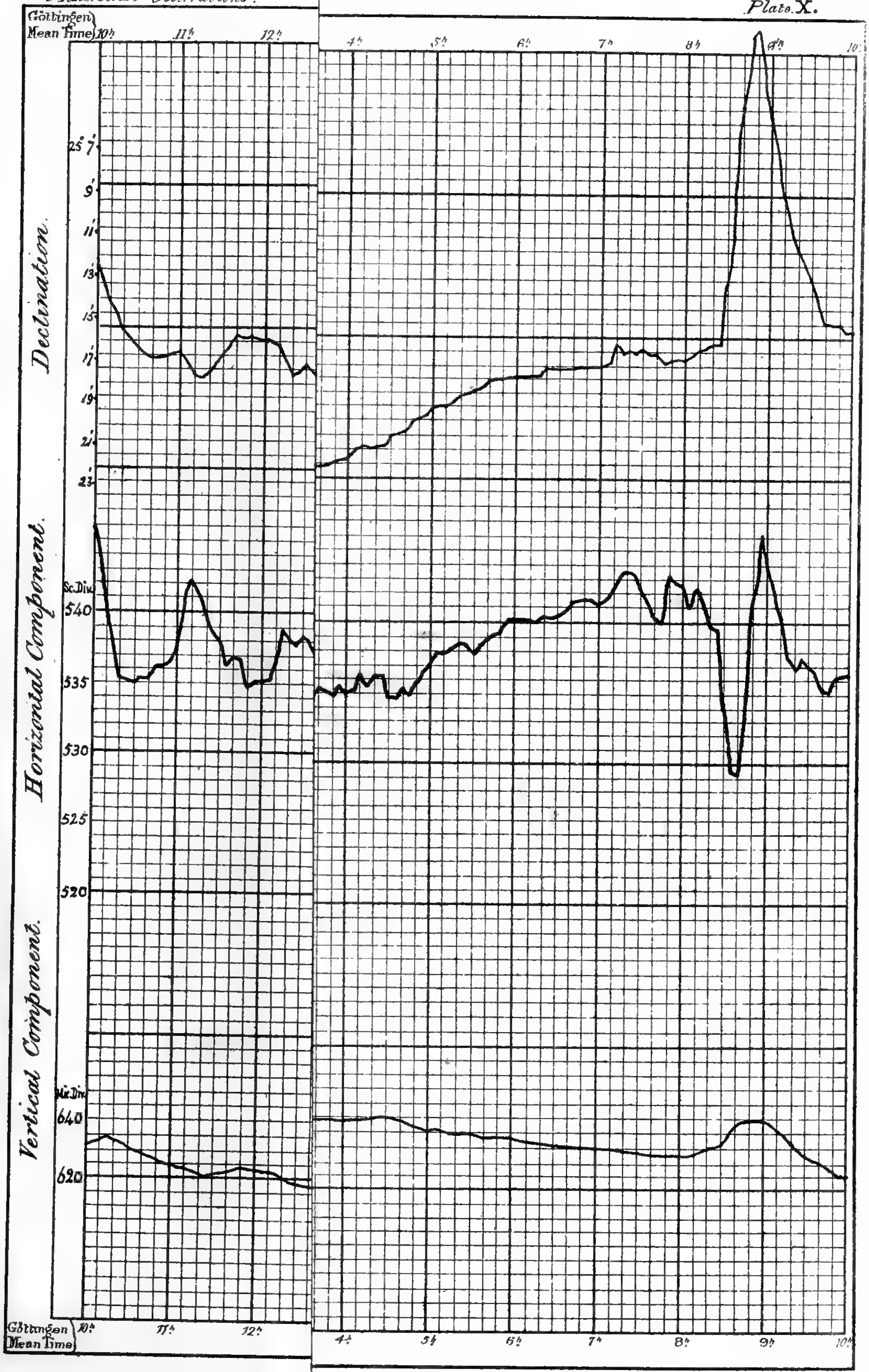


Term-Day Magnetical Observations. August 30, 31: 1844.

Plate IX.

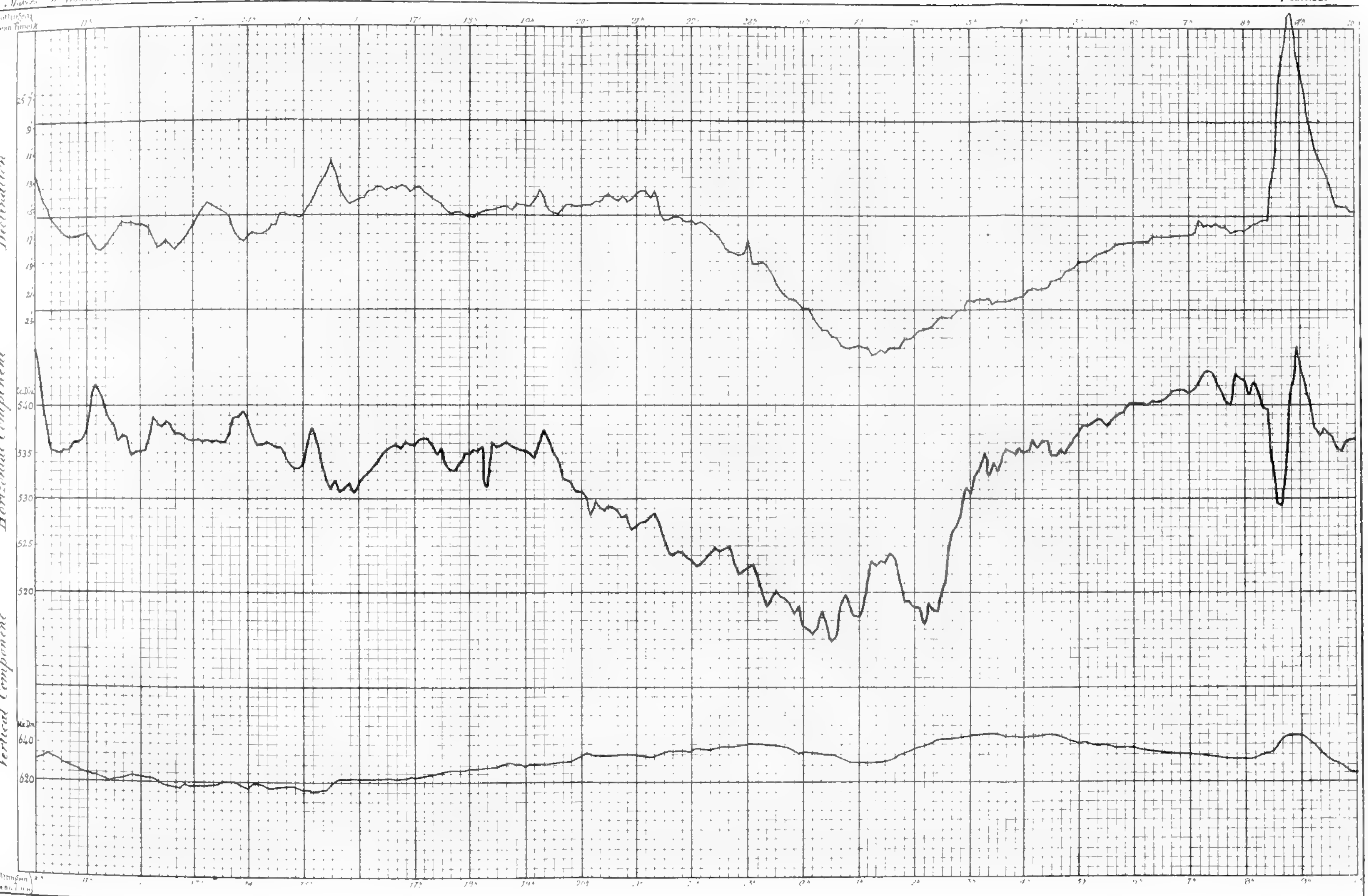


Ascending Curves indicate decreasing westerly declination and increasing force

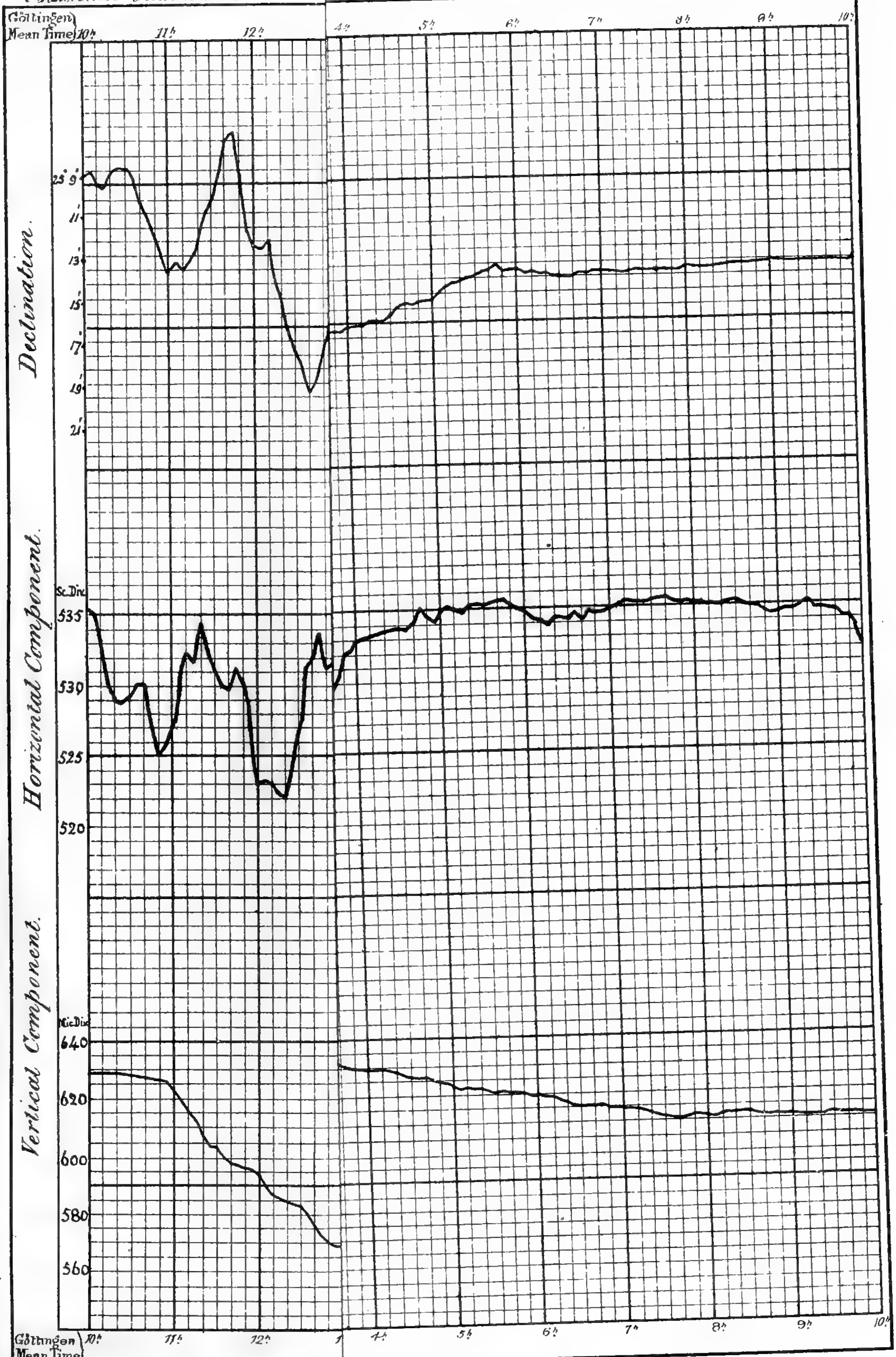

Göttingen Mean Time
10h
11h
12h
4h
5h
6h
7h
8h
9h
10h
Declination.
25° 7'
9'
11'
13'
15'
17'
19'
21'
23'
Horizontal Component.
Sc. Div.
540
535
530
525
520
Vertical Component.
Mic. Div.
640
620
Göttingen Mean Time
10h
11h
12h
4h
5h
6h
7h
8h
9h
10h

Term-Day Magnetical Observations. September 18, 19: 1844.

Plate X.

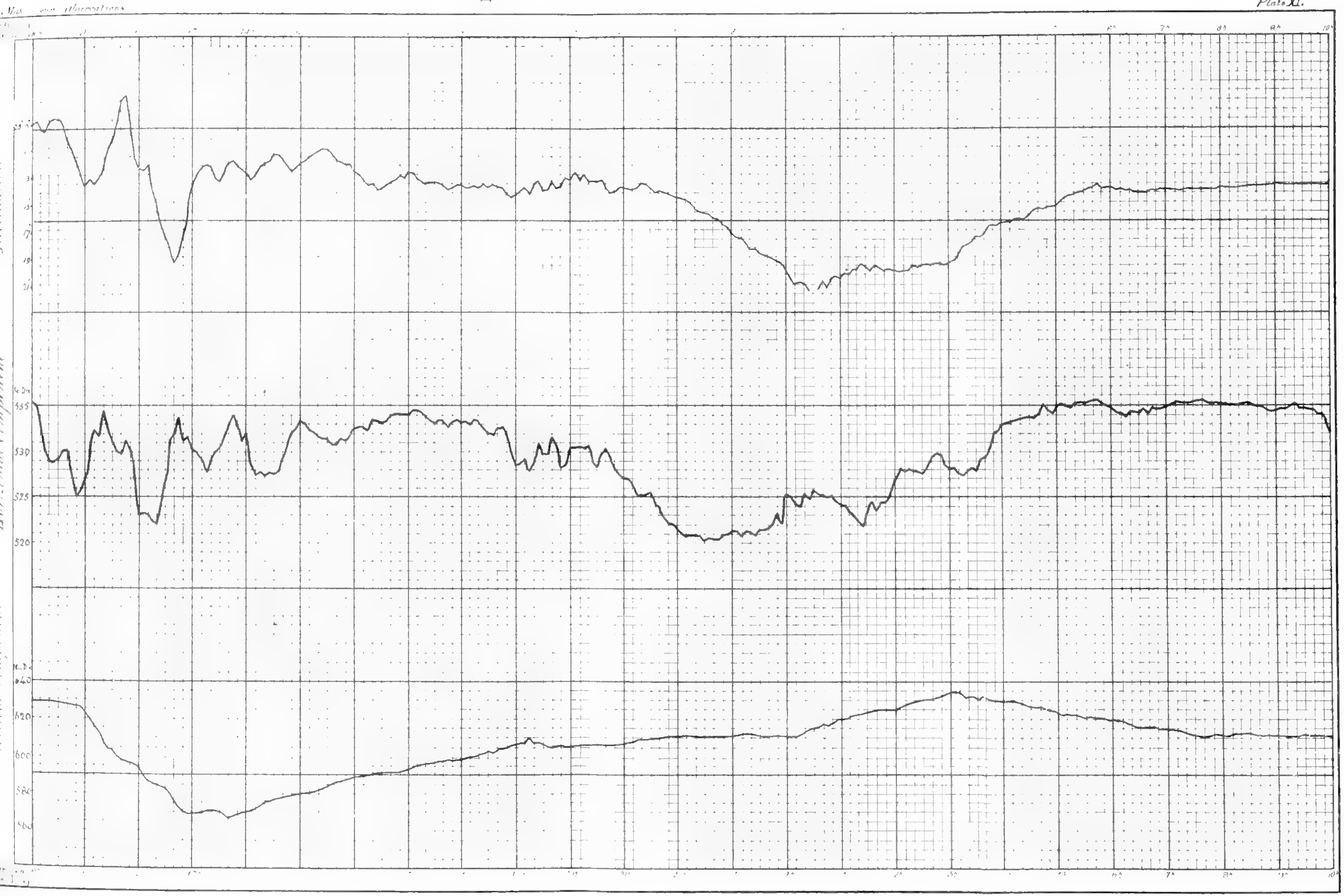


Ascending Curves indicate decreasing westerly declination and increasing force

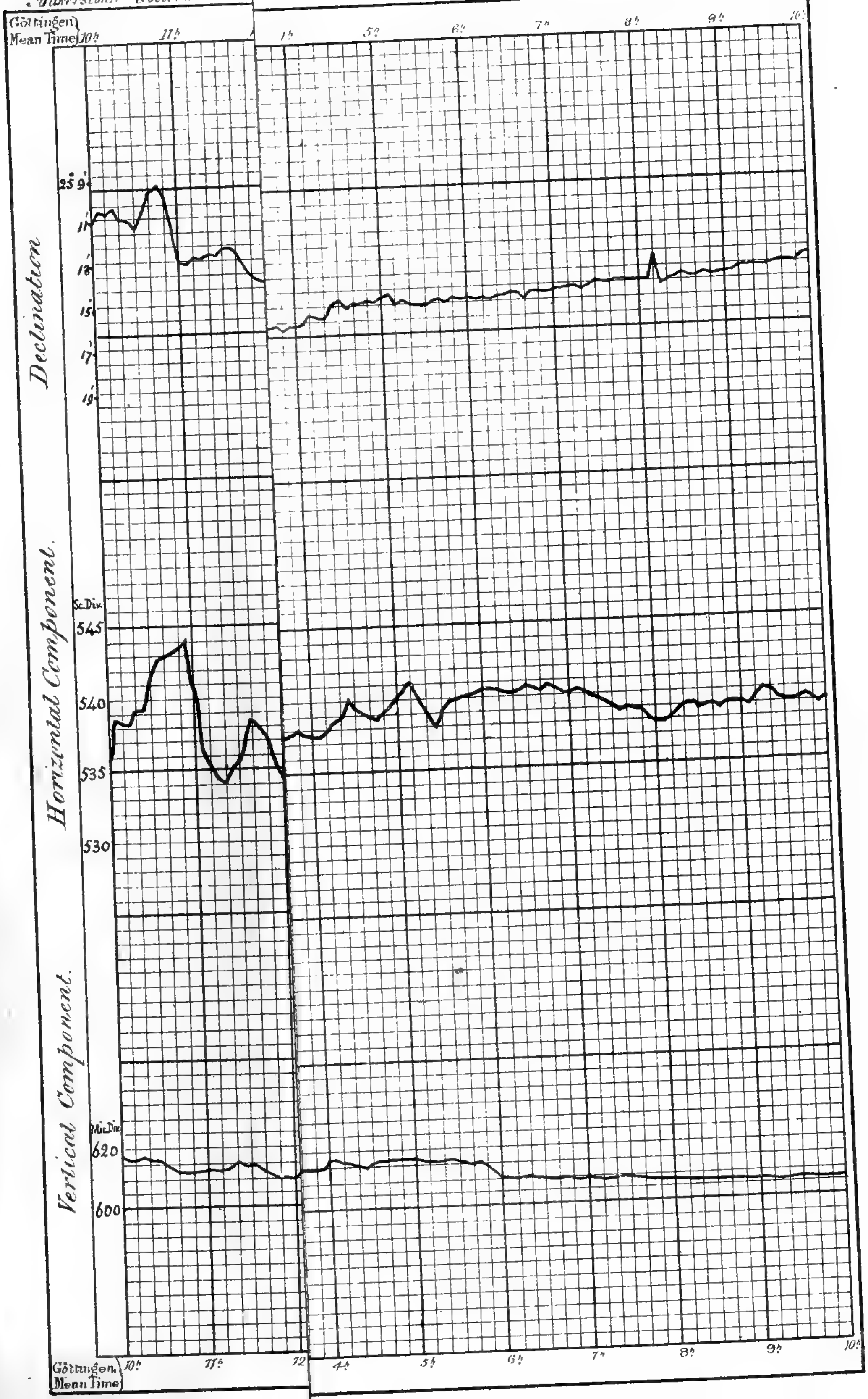

Göttingen Mean Time
10h
11h
12h
4h
5h
6h
7h
8h
9h
10h
Declination.
25° 9'
11'
13'
15'
17'
19'
21'
Horizontal Component.
Sc. Div.
535
530
525
520
Vertical Component.
Mic. Div.
640
620
600
580
560
Göttingen Mean Time
10h
11h
12h
1
4h
5h
6h
7h
8h
9h
10h

Term-Day Magnetical Observations. October 23, 24: 1844.

Plate XI.

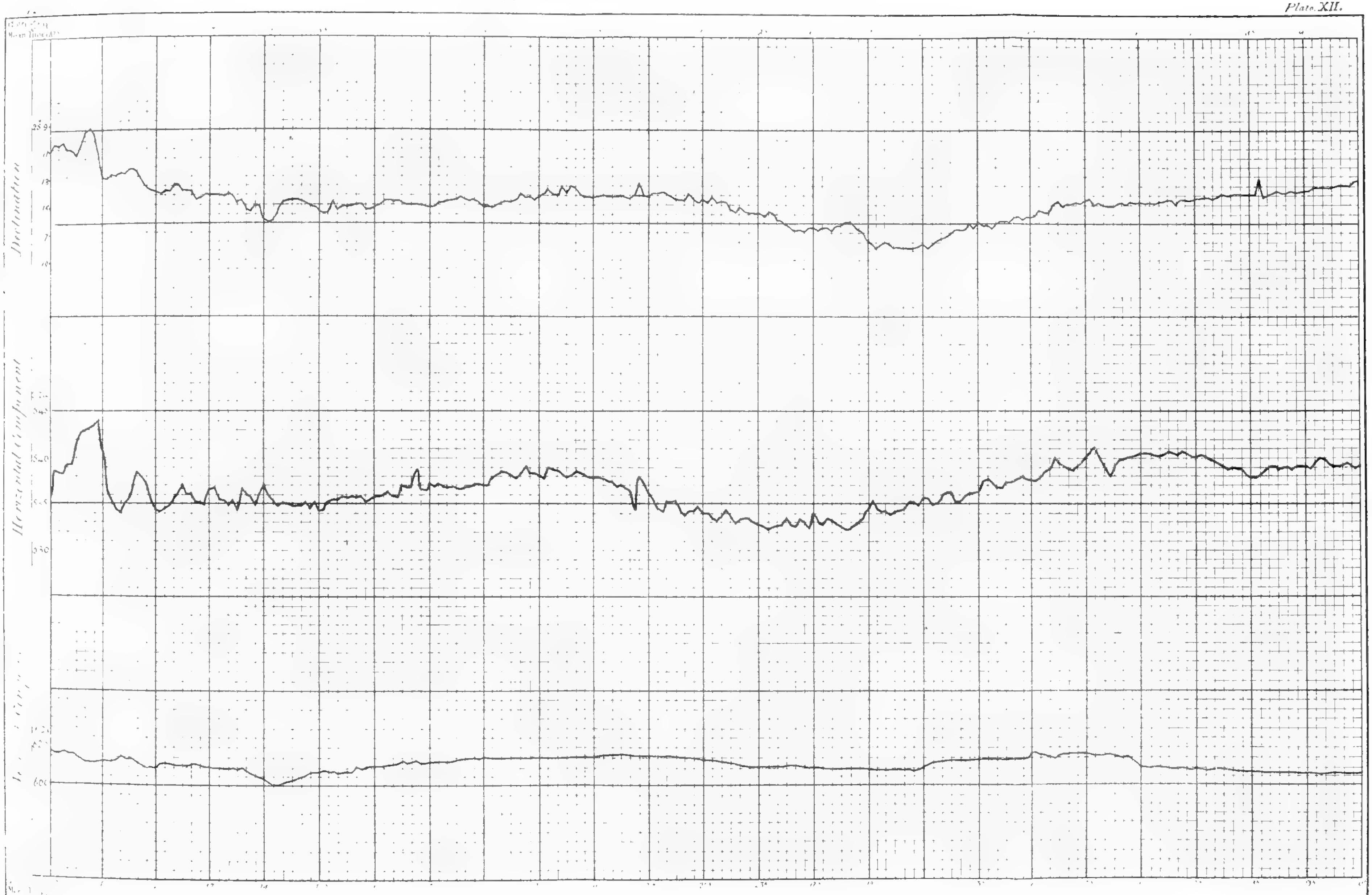


Ascending Curves indicate decreasing westerly declination and increasing force

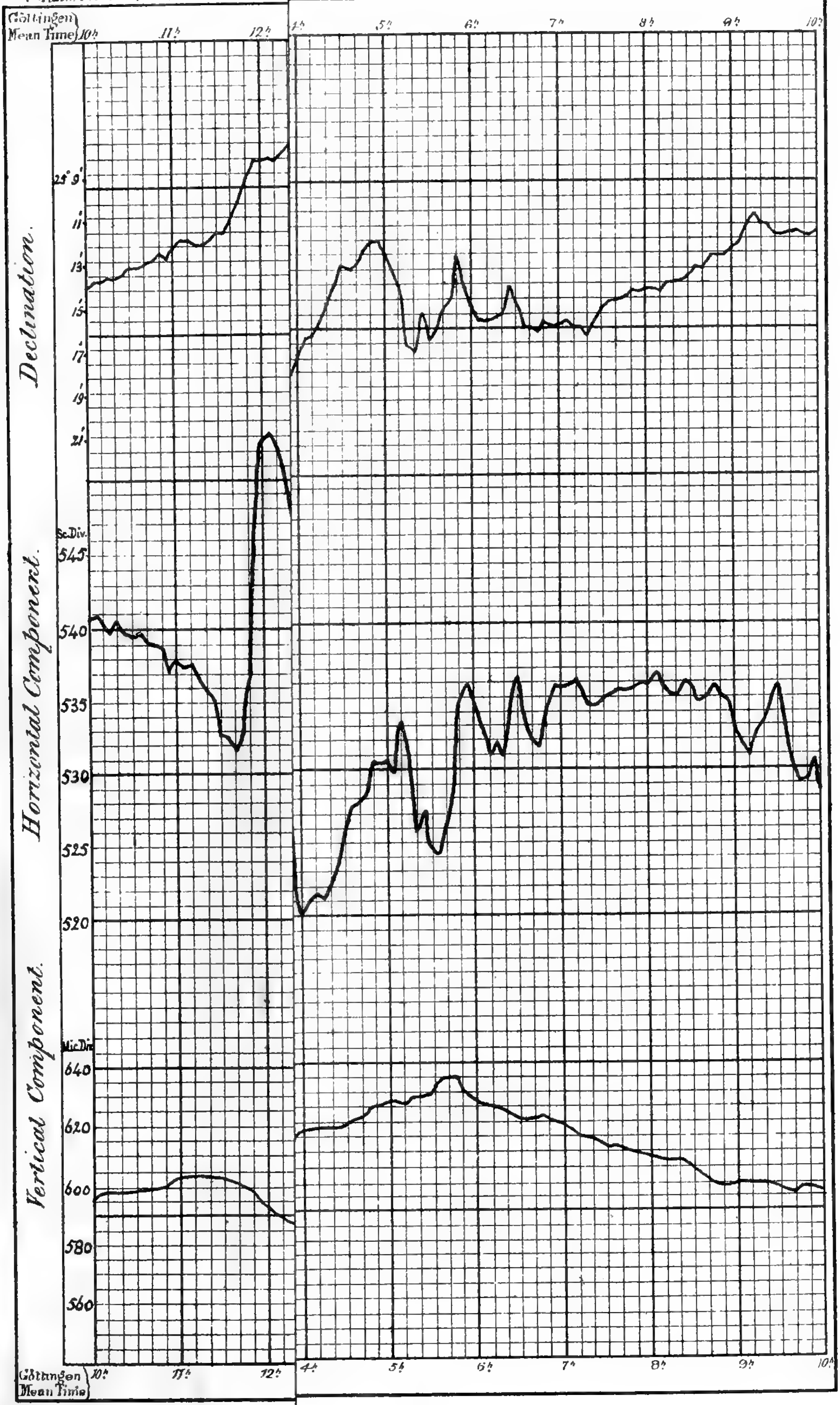

Göttingen Mean Time
10h
11h
1h
5h
6h
7h
8h
9h
10h
Declination.
25° 9'
11
13
15
17
19
Horizontal Component.
Sc. Div.
545
540
535
530
Vertical Component.
Mic. Div.
620
600
Göttingen Mean Time
10h
11h
12
4h
5h
6h
7h
8h
9h
10h

Term-Day Magnetical Observations. November 29, 30: 1844.

Plate. XII.

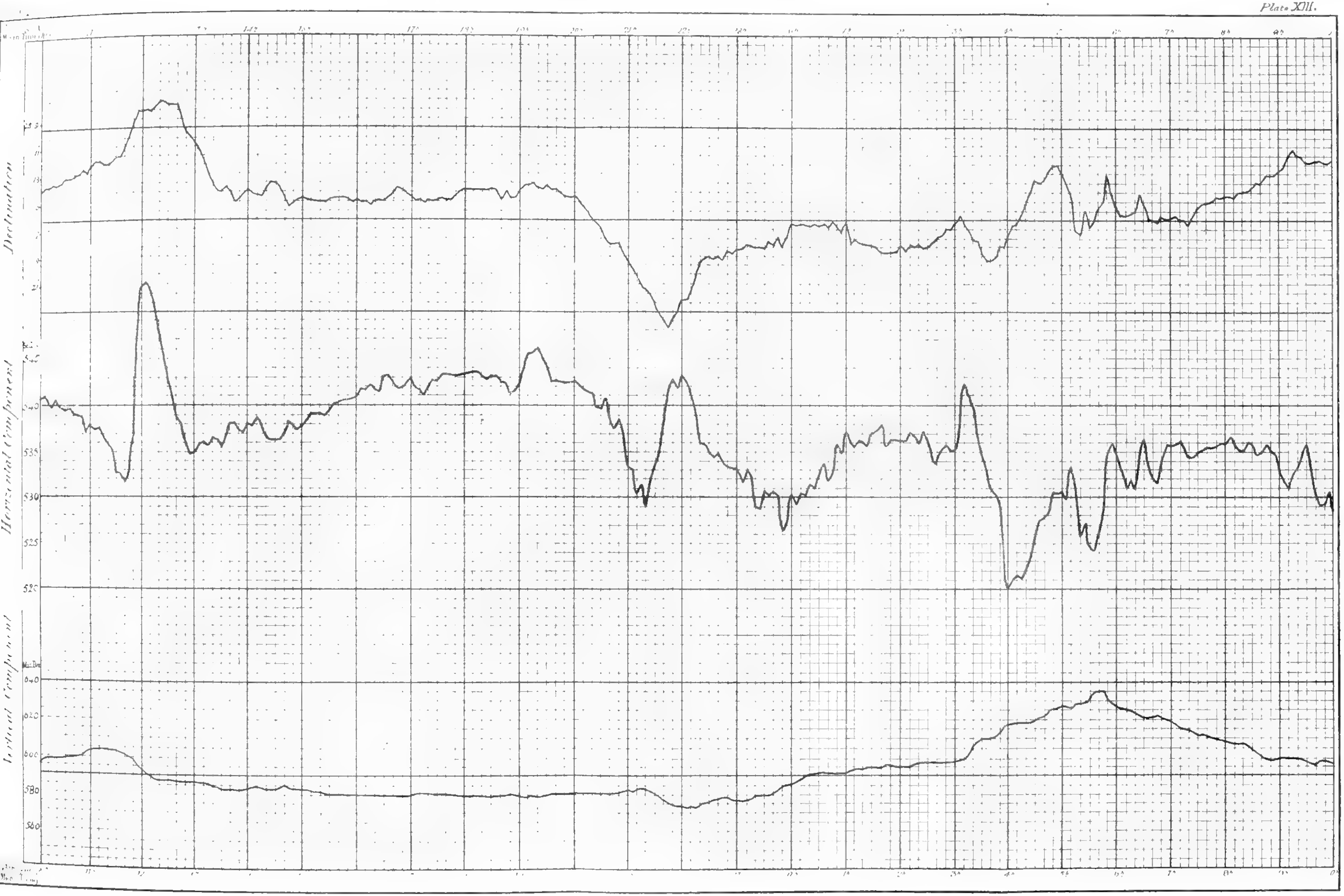


Ascending Curves indicate decreasing westerly declination and increasing force

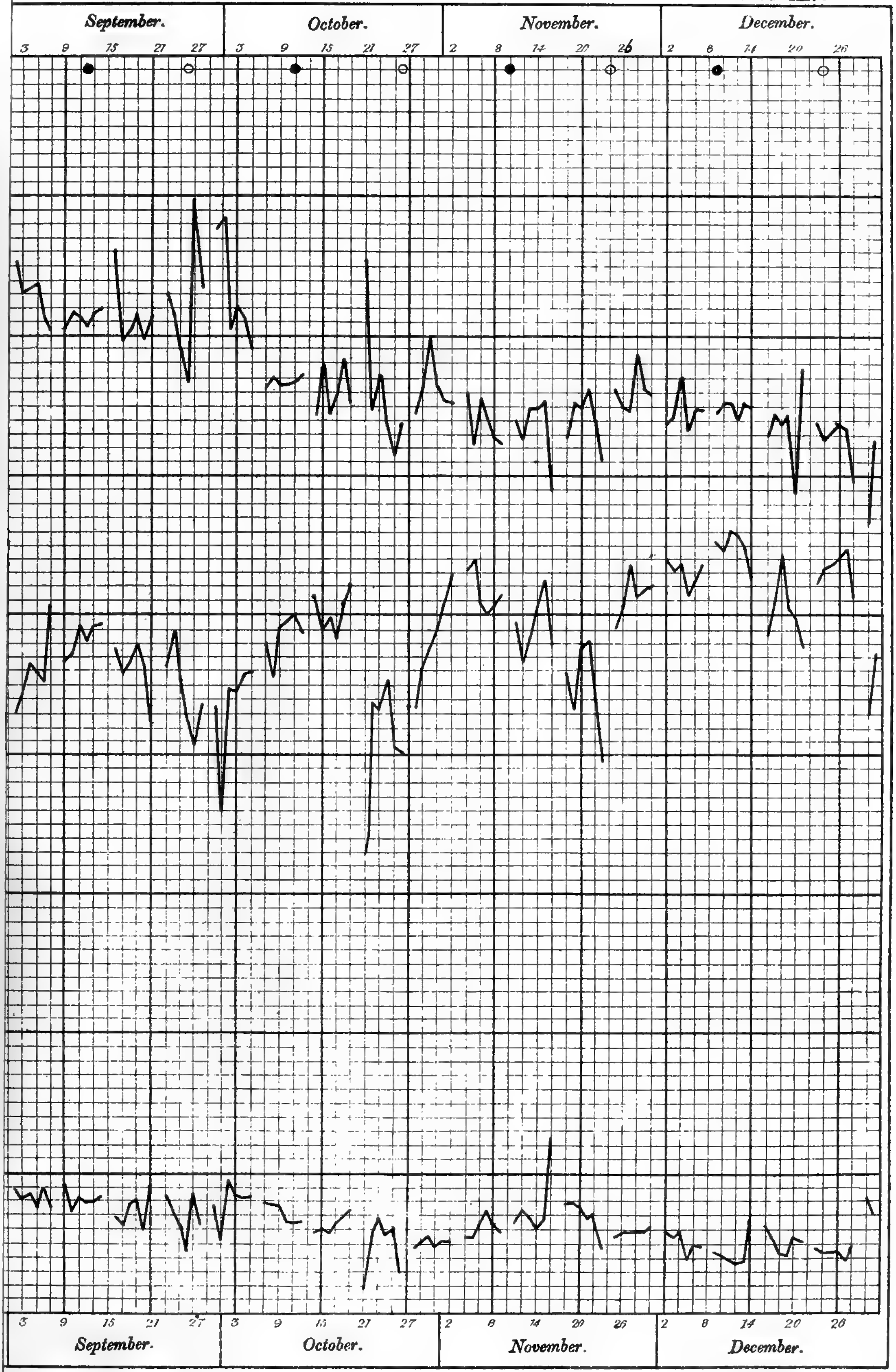

Göttingen Mean Time
10h
11h
12h
4h
5h
6h
7h
8h
9h
10h
Declination.
25° 9'
11'
13'
15'
17'
19'
21'
Horizontal Component.
Sc.Div.
545
540
535
530
525
520
Vertical Component.
Mic.Div.
640
620
600
580
560
Göttingen Mean Time

Term-Day Magnetical Observations. December 18,19: 1844.

Plate XIII.



Ascending Curves indicate decreasing westerly declination and increasing force


September.
October.
November.
December.
3 9 15 21 27
3 9 15 21 27
2 8 14 20 26
2 8 14 20 26
3 9 15 21 27
3 9 15 21 27
2 8 14 20 26
2 8 14 20 26
September.
October.
November.
December.

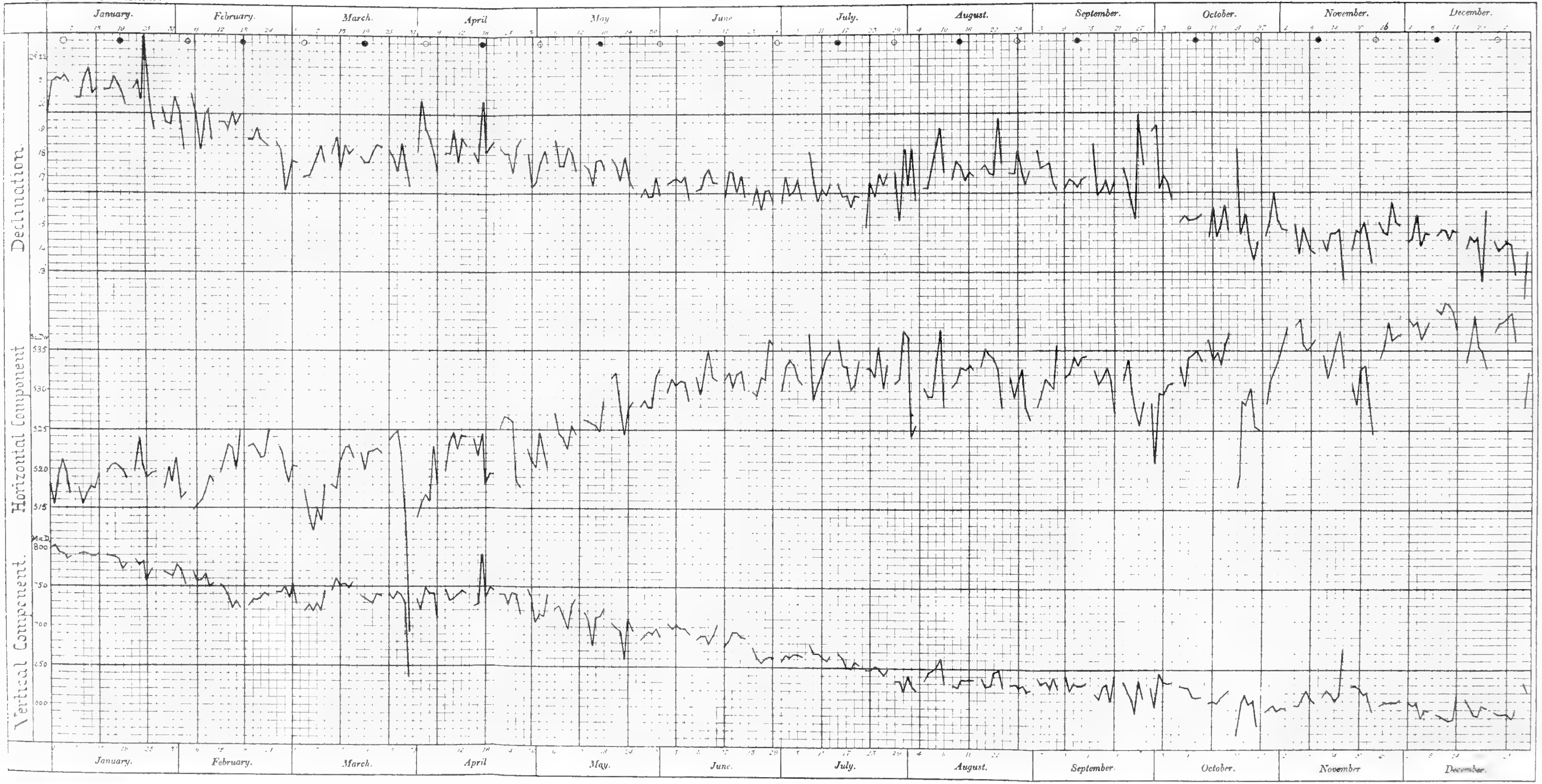
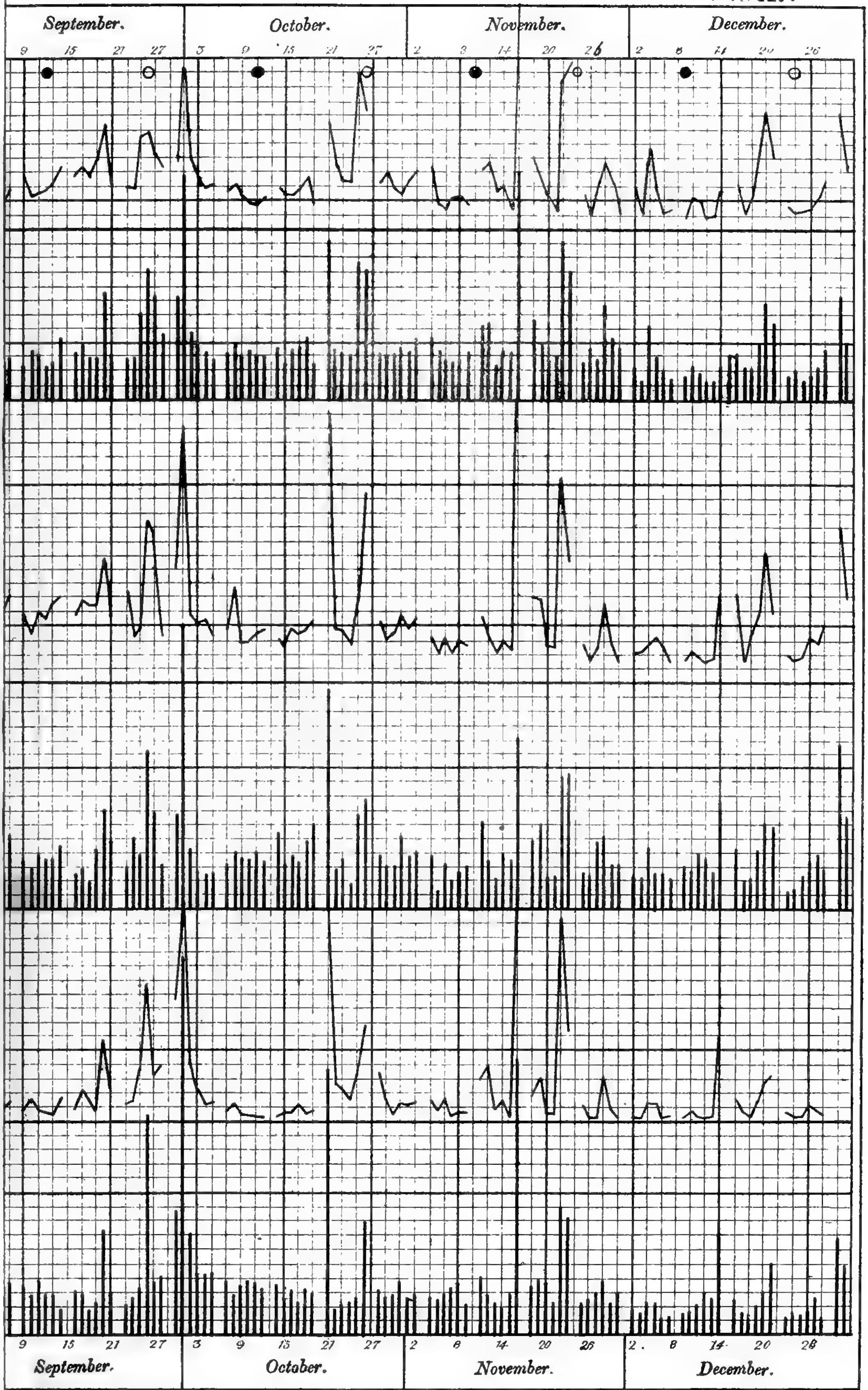
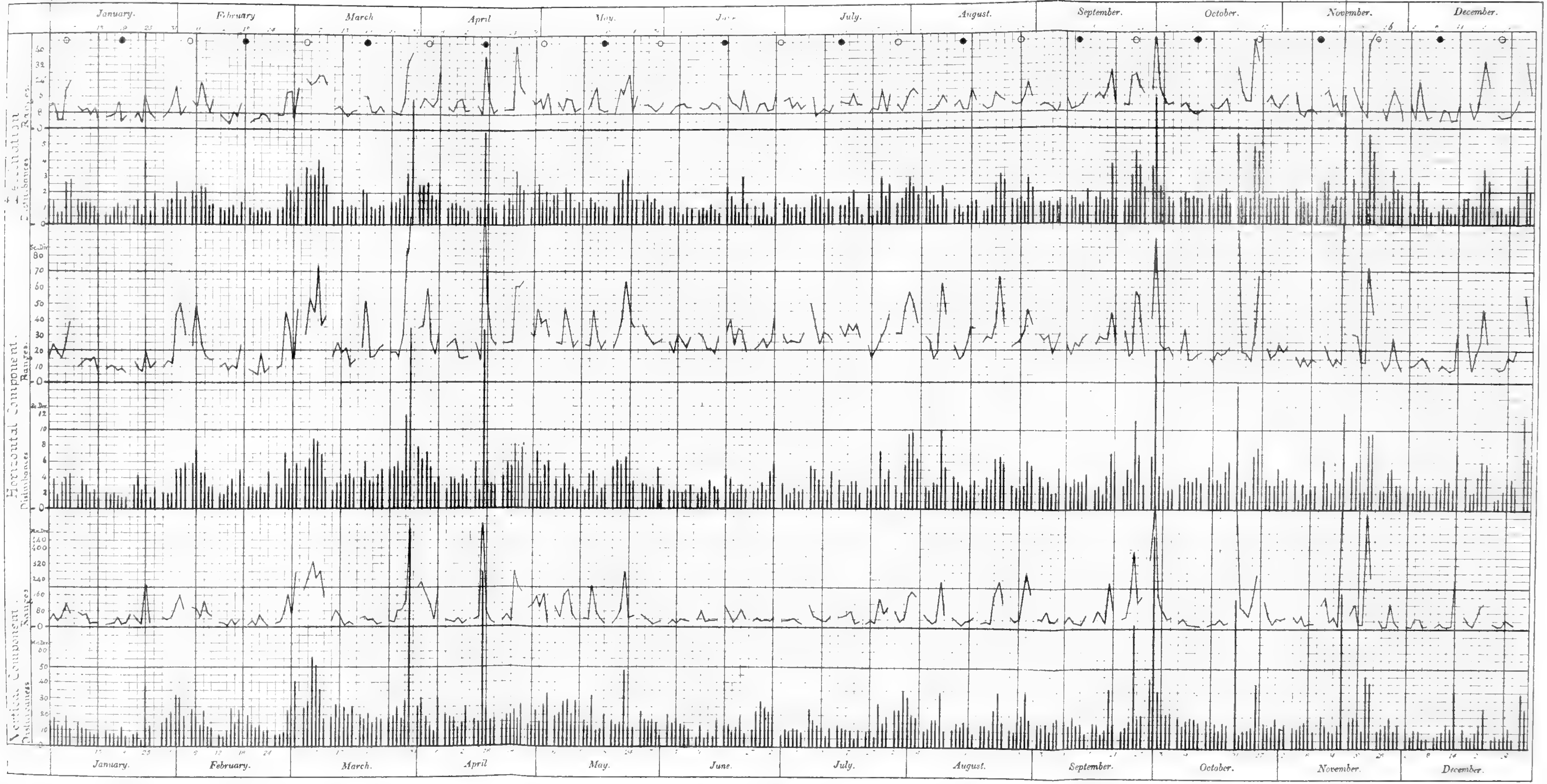

January.
February.
March.
April
May
June
July.
August.
September.
October.
November.
December.
Declination.
Horizontal Component.
Vertical Component.

Plate XV.

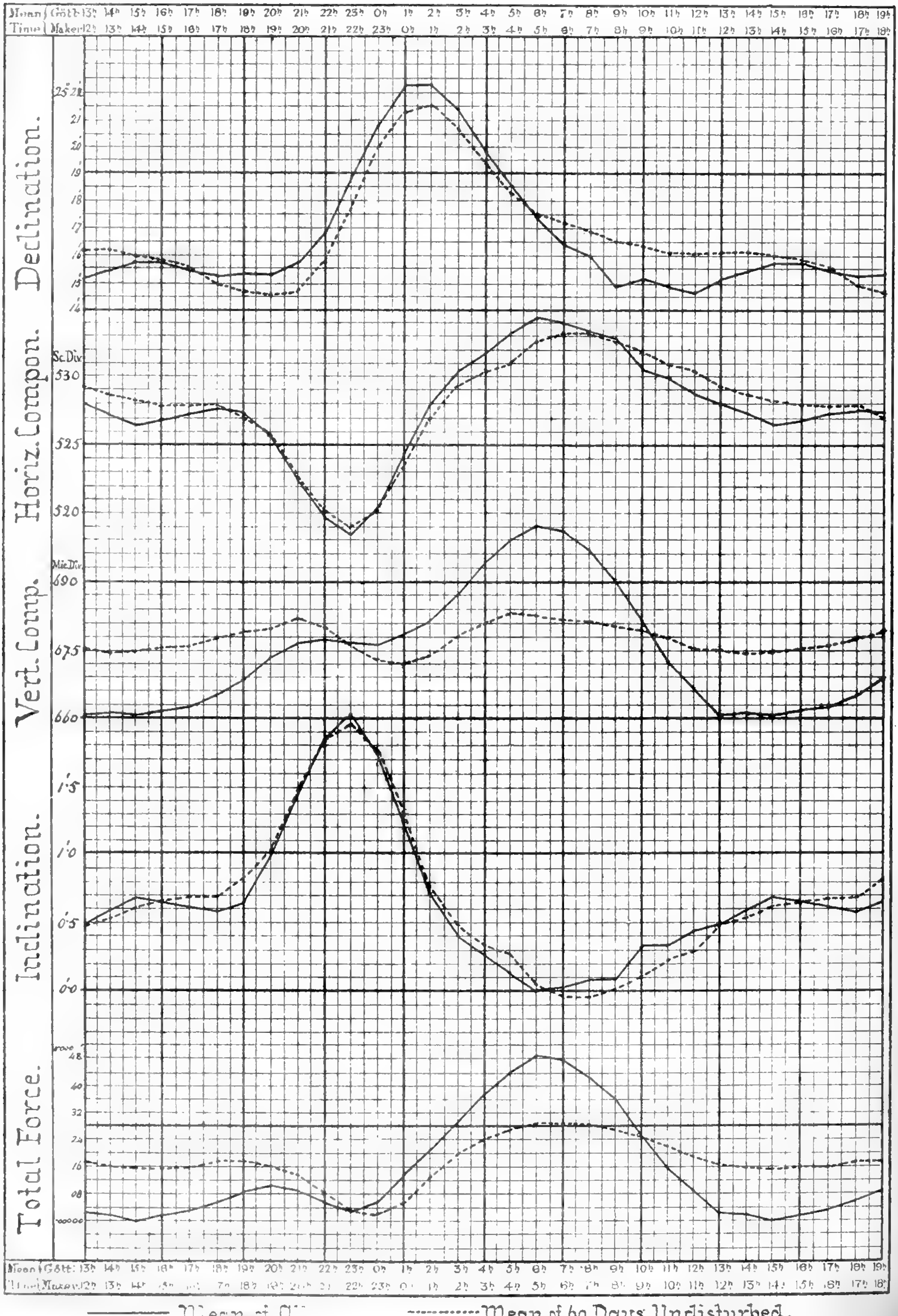


September.
October.
November.
December.
9
15
21
27
3
9
15
21
27
2
8
14
20
26
2
8
14
20
26
28

DIURNAL RANGES AND DAILY MEAN DISTURBANCES, 1844.



Makerstoun Observations.



HOURLY MEANS OF METEOROLOGICAL OBSERVATIONS, 1844.

Plate XVI.